ROLE-OVERLOAD AND JOB PERFORMANCE AMONG NURSES: STUDY OF OCCUPATIONAL STRESS AND MINDFULNESS

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **"**Role-Overload and Job Performance among Nurses: Study of Occupational Stress and Mindfulness**"** submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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Abstract

Extensively studied concepts like Role-Overload, Occupational Stress, Mindfulness, and Job Performance hold significant importance in organizational psychology. However, the interactional effects and interplay between these variables remain inadequately understood. This research addresses these gaps by investigating how Role-Overload impacts Job performance directly and on the mediated path through Job stress, furthermore how mindfulness moderates the adverse effects of Role-Overload on Job stress. The research used a quantitative design to collect data from 310 nurses working in Pakistani hospitals. The research used four reliable scales; Reilly's Role-Overload scale (Thiagarajan et al., 2006; Reilly, 1982), "Job Stress Scale" (Crank et al., 1995), Mindful Attention Awareness Scale MAAS (Brown & Ryan, 2003), with Cronbach's Alpha .82, .85 and .79. Individual Work Performance Questionnaire version 1.0 (Koopmans, 2015) had three subscales: Task performance, Contextual performance, and Counterproductive work behavior, with reliability, .8, .85, .65. Results indicate expected correlations: Role-Overload negatively correlates with Task and Contextual performance while positively correlating with Occupational stress and Counterproductive work behavior. Occupational stress mediates the relationship between Role-Overload and Job performance, with Mindfulness moderating the effect of Role-Overload on Occupational stress. Moderated mediation was also observed, where Mindfulness moderated the path between Role-Overload and Occupational stress to Job performance (three dimensions). The findings shine a light on the importance of reducing occupational stress and introducing mindfulness to enhance performance among the nursing staff in the medical setting and improve patient outcomes.

LIST OF ABBREVIATIONS

RO = Role-Overload

OS = Occupational Stress

MAAS = Mindful Attention Awareness Scale

JP = Job performance

TP = Task Performance

CP = Contextual Performance

CWB = Counterproductive Work Behavior

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Introduction

Stress is woven into the fabric of our daily lives and is unavoidable in a healthy lifestyle. There are many types of stress; some reduce wellbeing and cause negative outcomes (Maharaj et al., 2019), while others contribute to personal growth and have positive effects (Keech et al., 2018; Seery, 2011). Among the commonplace stressors with the highest damaging potential for nurses' productivity and performance, in particular, are Role-Overload and occupational stress. Understanding of Role-Overload and occupational stress is most relevant for those working in the healthcare industry as they are faced with daily stressors and are the frontline defense when a disease outbreak occurs, especially nurses, as they make up the majority of the health care occupation (Jun et al., 2020). Both Role-Overload and occupational stress have been observed as harmful phenomenon's that affect the wellbeing and performance of nurses as well as employees in general (Liang et al., 2020, Nah et al., 2022; Nisar & Rasheed, 2020; Quick & Henderson, 2016; Said & El-Shafei, 2021; Tang, & Vandenberghe, 2021).

Just as physical and psychological health is essential for the well-being of a human being, so are physically and psychologically healthy employees necessary for the wellbeing of an organization (Kundi et al., 2020; Rath & Harter, 2010). It is more profitable for organizations to enhance their employees' quality of life and to improve their wellbeing by increasing positive work experiences (Allen, 2019; Leitão et al., 2019). Since well-being is of the utmost importance in the organizational psychology field, it is necessary to monitor the stress and load experienced by nurses to ensure their wellbeing as well as to ensure the optimum working of healthcare institutions.

Role-Overload is a stressor that results from an individual's perception that their physical and psychological jobs in different roles exceed their personal resources (Eatough et al., 2011). Role-Overload is a stressor that can easily turn into strain (Lazarus & Folkman, 1984) while this strain is seen as negative and beyond the capabilities of the resources available to manage it, for the individual experiencing the stressors (Jex & Beehr, 1991). Role-Overload embodies the buildup of frustration because of the hours spent, the time sacrificed only to result in an inability to finish the assigned tasks in time. As such Role-Overload does not simply refer to working overtime or simply business in job, rather, it refers to a situation in which 'life demands' exceed the available resources to meet them, and this causes an individual to feel overwhelmed with the amount of work they have to do.

Recent studies find that burnout and job dissatisfaction are significant contributors to nurse turnover (Shanafelt et al., 2016); hence with the recent increase in shortage of nurses, partly due to overseas migration for better pay/positions, this can become a very serious problem in terms of workload and demands for the remaining nurses (Madani, 2021). This suggests that factors that promote burnout and job dissatisfaction i.e. Role-Overload, can be related to job stress among nurses (Pitchford, 2022; Ranihusna et al., 2019).

Especially among nurses, Role-Overload and stress from work as well as home can lead to worsening physical and mental health (Na et al., 2022; Saifan et al., 2019) which can directly translate into worsened work outcomes that can be very harmful for the patients who put their trust in them (Basirun et al., 2019; Boamah et al., 2017; Stimpfel et al., 2020)

Nurses, like many other professionals, have to strike a balance between both at-home stressor in addition to work stressor, i.e. work-related and non-work-related tasks, which is why the excessive demands faced by nurses may be the reason they have lower quality of life (Das et

al., 2019; Hemingway, 2017; McLennan et al., 2010). Nurses must develop strategies to deal with the conflicting demands imposed on them (Kirchhoff & Karlsson, 2018) while maintaining healthy relationships with family and friends. This is especially true in Pakistani society as female nurses have much higher obligatory duties to their family and relatives in addition to the long working hours (Hanif & Naqvi, 2014). Pakistani nurses require support both at home and at work to avoid negative outcomes such as burnout and maintain a happy work life (Shahzad et al., 2019). However, feeling overburdened and stressed may not leave most nurses with much maneuver room to be able to deal with both work-family responsibilities to their complete satisfaction much less to the best of their abilities, this can further intensify feelings of Role-Overload and turn these stressors into strain leading to adverse job outcomes.

It should be noted that Role-Overload acts as a stressor that facilitates an increase in occupational stress among low mindful individuals, however studies have shown how mindfulness may moderate the relationship between a stressor and stress (Bayighomog et al., 2023; Lee et al., 2020). Overwork that ends in feelings of in-effectiveness and failures is one of the most prevalent problems in jobs which results in the ill health of workers (Deniz & Ertosun 2015; Maruyama, 2017). Studies find that Role-Overload and occupational stress are often comorbid; as researchers paint a damning connection between employees' feeling overwhelmed with their work and an increase in their stress, especially occupational stress (Bakker, 2017; Dodanwala et al., 2022)

The excess amount of work from various portions of life can lead to Role-Overload as such Role-Overload constitutes stressors that depletes the mental and physical reserves of people, especially among working nurses (Tang, & Vandenberghe, 2021). The compounded effect of depleted energy, due to Role-Overload, and reduced mental and physical health, due to

occupational stress, may have a significant effect on the performance of employees (Schulz et al., 1998; Tang & Vandenberghe, 2021). Because of the reduced body resources, many people find the physical or mental energy to work long hours lacking and find it difficult to pay close attention to work (Hobfoll, 1989; Tang, & Vandenberghe, 2021).

When individuals are placed under immense pressure and workload, such that they feel overwhelmed by their responsibilities, it results in stress and feelings of hopelessness. Truchot and Andela (2018) in their research explored how farmers experiencing excessive workload, family problems, financial worries along with various other stresses underwent feelings of helplessness, this was primarily due to the amount of work they had to do in both their private lives and their official jobs.

In Japan, where it's a common practice to experience overtime and overwork; the presence of overwork-related disorders has been a serious issue for many years. Both private as well as public businesses usually push their employees to a stressful level; this not only impacts their work life but also severely impairs their home life, which has led to an increase in the trend of cerebrovascular/cardiovascular diseases and mental disorders occurring among these employees (Yamauchi et al., 2018).

There is a lot of research in the area of organizational psychology that points to a link between individuals experiencing excessive demands and occurrence of overwork-related disorders, these disorders can range from physical illnesses to mental ones (Schlotz, et al., 2004; Takahashi, 2019). According to a recent report, mental disorders as a result of overwork may even exceed overwork related cerebrovascular/cardiovascular diseases (Yamauchi et al., 2017).

Role-Overload has been observed to correlate positively with an increase in occupational stress. According to a study on Iranian nurses, Role-Overload, role ambiguity and role conflict

function as stressors, the results of their study showed that all the role stressors were correlated to an increase in occupational stress (Karimi et al., 2014). The negative effects of Role-Overload have been well documented, the negative outcomes among nurses can range from burnout, increased turnover, depression, stress, and anxiety etc. (Ahn & Logan, 2022; Basirun et al., 2019; Na et al., 2022; Pitchford 2022; Tang & Vandenberghe, 2021).

Role-Overload is especially a major concern among Pakistani nurses as it leads to increased turnover in an area where there is already a shortage of professionals (Drennan & Ross, 2019; Nazir et al., 2022). Healthcare organizations in Pakistan need to pay more attention to the area of work family conflict, as it can lead to heightened perception of Role-Overload (Dodanwala et al., 2022), for their employee's wellbeing as that directly correlates to their intention to stay and performance level (Foy et al., 2019). They can do this by various methods that lessen the burden (perception of Role-Overload) on healthcare workers (Bano et al., 2023).

Bacharach et al. (2019) identified that strategies that minimize role conflict are not as effective in lowering Role-Overload; however, more research is needed to specifically distinguish role conflict and role ambiguity from Role-Overload. Concerning Role-Overload; it may not entirely be difficult to mitigate its negative effects if effective measures are adopted such as mindfulness and other stress interventions (Lin & Ling, 2018). One of the primary benefits of mindfulness is its ability to instill confidence and calmness in individuals and as high performers take on more tasks and responsibilities, they are able to feel more motivated and less stressed which invariably leads to them performing better. As individuals are rewarded for their efforts they may be further motivated to perform even better, in this way mindfulness may facilitate in reducing the harmful effects of Role-Overload. In this situation, more mindful individuals will perceive Role-Overload as a challenge stressor to be overcome resulting in less

negative outcomes. The performance of individuals with lower mindfulness may see a decrease whereas those with higher mindfulness may not be as affected by Role-Overload (LePine et al., 2005; Lin & Ling, 2018).

When individuals experience stress and overcome said stress, they are more empowered with increased self-confidence and improved mental health (Lin & Ling, 2018). However, when individuals fail to overcome the stress and pressure, they may experience resource loss. Reduced personal accomplishment is a phenomenon when individuals feel that their efforts are not worthwhile and as a result don't feel rewarded, this results in stress and hopelessness (Cordes & Dougherty, 1993). This also points to the importance of feelings of satisfaction in addition to exhaustion experienced as a result of overwork, so those individuals that feel their hard work is meaningful and their expectations are fulfilled, may be less likely to feel stressed as a result of Role-Overload (Chiara et al., 2019).

There are past studies that have reported positive, negative as well as no associations between Role-Overload and job performance (LePine et al., 2004; Lin & Ling, 2018; Spector & Jex, 1998). We can argue based on research evidence that Role-Overload may not necessarily function as a hindrance stressor, rather as a challenge stressor. Additionally, depending on the individual characteristics and individual differences it may not necessarily be similarly detrimental to every individual's performance.

A study by Mittal & Bhakar (2018), in Pakistan, found that even among married women within the Banking Sector, small amounts of Role-Overload can in fact improve performance, however high concentration of Role-Overload did lead to significantly negative outcomes; the increased job stress and decreased job satisfaction along with high Role-Overload leads to reduced performance among working women. As such, researching this area may prove

invaluable to understanding the phenomenon of overwork in detail so as to understand its effects on performance and behavior of people working in the nursing profession.

Employees face many significant issues nowadays, some caused by work burden i.e. stress, burnout, others caused by extra roles that individuals face i.e. work-life conflict, and disengagement. Each individual has a different workload to productivity ratio. Similarly different workers have different thresholds for the amount of occupational stress that they can function and flourish under. Furthermore, the dynamic interaction of personality traits and environmental fit can determine how an individual feels work stress (LaPorta, 2010). According to the present research, there may be some effect of trait mindfulness that make an individual less susceptible to the negative effects of Role-Overload.

Those individuals who perceive the overload of roles as a challenge rather than an inconvenience may be better equipped to handle those stressors and may as a result of the motivational effect, perform optimally at their jobs while those with lower trait mindfulness may not be able to see Role-Overload as a challenge and may in fact be oppressed by it, which may as a result lower their job performance. Workload can be increased to achieve optimal output but after a certain limit an individual's ability to bear the workload decreases which subsequently lowers their output. Conversely the experience of Role-Overload may push some individuals (especially those with higher mindfulness) to be able to handle occupational stress; this may also increase their overall potential, which they might not have reached in the absence of a challenge.

One of the principal causes of decreased wellbeing in a workplace for an employee is Occupational Stress (Badu et al., 2020; Son et al., 2019). Negative factors in workplaces are far reaching and impact the lives of not only the employees but also the organizations they serve (Foster et al., 2020). Occupational stress arises when workers feel pressured by their work

demands and/or have to work under unfavorable conditions in a stressful work environment, this stress can be mental, physical and/or emotional (Hurrell & Murphy, 1996; Quick & Henderson, 2016; Sauter et al., 1992).Occupational stress is a known health risk for a range of psychological, behavioral, and medical disorders and diseases; this is also the cause of worsening performance (Nisar & Rasheed, 2020; Patro & Kumar, 2019; Stimpfel et al., 2020).

Hospitals aim to cure illness and often have a bustling environment due to the high patient volume. This can lead to a stressful atmosphere for both patients and staff. Although most patients usually do not have to spend a long time there, healthcare workers such as doctors and nurses must face this stress daily; for long hours on end (Duffield et al., 2014). The nurses are under constant pressure to perform impeccably so as not to make any mistakes managing patients who place their trust in them (Trujillo, 2022).

Adverse outcomes among nurses suffering from a stressful work environment can often be worsened by the effects of various stressors in their lives. Studies on occupational stress also show that various life stressors such as work and family conflict not only increase job stress but also predict burnout rates and health outcomes among nurses (Yuan et al., 2023). Occupational stress can be literally deadly in some cases as the combined stress of both work and home is often correlated with an increased risk of suicide among nurses (Zeng et al., 2018). Subjective feelings of stress can directly decrease individual's mortality by increasing frequency of cardiovascular disease, hastening aging, causing DNA methylation, making one more vulnerable to colds, depression, addictions etc., it can be traced to the six leading causes of death in the world for both women and men (Ashworth, 2022; Oakman et al., 2020; Vidrascu et al., 2019).

Occupational stress can often be unavoidable when the employees have little to no control over their jobs; this also occurs in the existence of an unsupportive environment (Foy et

al., 2019; Ziaei et al., 2019). According to the World Health Organization (WHO, 2011), when workers do not feel supported by supervisors or coworkers, little to no control is afforded to them in the performance of their work and they get the feeling that they are being unjustly compensated for their efforts, they usually feel more stressed and hopeless. Many studies find workplace stress can seriously impact the physical as well as mental health of employees; it can do that by increasing negative coping strategies, causing anxiety and depressive symptoms (Ganster & Rosen 2013; Mark & Smith 2012; Sturm et al., 2019; Tetrick & Winslow 2015). And nurses functioning under suboptimal mental and physical health will not be able to provide optimal services to the patients (Amarat et al., 2019; Pitchford, 2022; Sturm et al., 2019; Zhang et al., 2022).

The nature of a job is just as important as the workload of a job in determining its effects on an individual's experience of occupational stress. The nursing profession is often overworked as they have long hours and demanding work. A nurse's jobs vary widely, usually involving monitoring patients, administering prescribed medications, stabilizing patients until a doctor arrives (oftentimes substituting for some of the physician's roles) and performing many managerial tasks (Bolton, 2003; Maier et al., 2018). These variety of jobs can not only tax the mind but the pressure of performing well can also cause stress to build; as the slightest mistake in performance can endanger a patient's life (Akkoç et al., 2021).

One of the emerging strategies for creating a healthier workplace environment is through the introduction of mindfulness strategies in order to prevent adverse outcomes later on. Mindfulness as a concept, has its origins rooted in some Buddhist teachings, as Buddha was quoted saying "Do not dwell in the past, do not dream of the future, Concentrate the mind on the present." (Olendzki, 2005). Mindfulness can be defined as "Awareness that arises through the

intentional act of paying attention to the happenings in present moments, as open mindedly, calmly and non-judgmentally as possible "(Kabat-Zinn, 2015).

Mindful individuals try not to assign any meaning to their experiences and try to accept them as is, to the best of their abilities furthermore they also cultivate inner attentiveness, "the ability to be aware of one's own emotions and thinking in the moment" (Epstein, 1995). As such we surmise that mindfulness encompasses both external (environment) and internal (emotions, sensations, and states of mind) judgment-free attentiveness (Brown & Ryan, 2003, p. 822: Glomb et al., 2011, p. 118).

Recent studies emphasize the significance of mindfulness and the psychosocial work environment in promoting workplace health and mitigating occupational stress (Mesmer-Magnus et al., 2017). Advancements in organizational health underscore the crucial need to address occupational stress, whether through mindfulness practices or other stress reduction interventions (Mishra et al., 2019; Žutautienė et al., 2020). Research indicates that stress and burnout significantly deteriorate both the quality of life and work performance of individuals (Arandjelovic et al., 2010). Therefore, proactive measures such as mindfulness training to enhance individual mindfulness are not merely suggestions but imperative for enhancing working conditions.

Job stress among hospital workers is entirely preventable, as a study on hospital physicians in Lithuania found that different types of burnouts were prevalent among the physicians, however increased job security and job control could effectively minimize job stress among hospital physicians (Žutautienė et al., 2020). Stress among medical professionals is a major concern as it is a critical field requiring precision and higher attention from them, and it is a field highly associated with a large number of stressors (Khamisa et al., 2015; Kumar, 2016;

Krystal, 2020). Furthermore, with the recent Covid-19 scare, stress levels have only seen an increase with a decrease in wellbeing and quality of life (Hummel et al., 2021; Krystal, 2020). The importance of intervention measures can become apparent after analyzing how much harder it has become for workers to stay in the field with the increased stress due to trauma caused by the recent pandemic (Hummel et al., 2021; Kansoun et al., 2019; Propper et al., 2020; Raudenská et al., 2020).

When talking about interventions, there are many forms of interventions that are effective in reducing stress and burnout, i.e. job control, job security, behavior training etc. (Žutautienė et al., 2020); however we can see based on a review of literature, that mindfulness training has been seen to be not only be an effective intervention for improving performance (Mishra et al., 2019) but also has one of the highest incremental validity; meaning its ability to predict both burnout and job performance is leagues better than other predictors of burnout and performance, it is also effective in improving emotional regulation and dealing with the draining aspects of a routine job (Mesmer-Magnus et al., 2017).

Trait mindfulness has also been seen to impact workplace outcomes and have a significant impact on workers' mindset, this can then be seen in the employee's improved performance, satisfaction with job and increased commitment to their organization (Good et al., 2016; Mesmer-Magnus et al., 2017; Mishra et al., 2019). Being able to predict future employee behavior can be a useful tool when selecting new hires; Trait mindfulness may be a useful tool in assessing how well a potential employee may handle a specific job stressor as pointed out by Good et al. (2016) in his observations of various organizations. According to Good et al., employees' mindfulness levels appeared to be strong predictors of organizational outcomes, as mindfulness predicted employee performance, interpersonal relationships as well as employee

well-being. In addition to that, by implementing mindfulness training organizations have observed improved workplace functioning (Good et al., 2016, p. 115; Mishra et al., 2019).

Taking stock of individual employees' mindfulness can be especially useful in assigning work roles among employees, as depending on level of mindfulness, some employees may not be as suited to some tasks or may not function as well under specific supervision types or in specific job environments (Dane, 2011; Dane, 2015; Mesmer-Magnus et al., 2017) A recent research by Baranski et al. (2023) emphasized how important it is to consider individual personality traits in order to improve task focus and employee happiness; in their study they found that when designing work spaces it is important to keep in mind the character or personality traits of an employee as their personality and workplace compatibility has significant effects on their focus and happiness (Baranski et al., 2023).

Selecting a supervisor can be a very daunting task as the leader sets the tone for the rest of the employees; as such it is necessary to take special care to assess mindfulness levels of candidates who will fill the position of supervisors, since this position requires extraordinary levels of self-regulation, attention, awareness, and control. Employees with high trait mindfulness may be well-suited to higher positions as this position influences employee performance and employee wellbeing, Overall, measuring trait mindfulness among employees can provide valuable insights into their strengths and weaknesses, helping to ensure that they are placed in roles where they can thrive and perform to the best of their abilities (Haberlin, 2020; Zoghbi-Manrique-de-Lara et al., 2020).

Higher trait mindfulness has also been linked to more altruistic behaviors, this means that employees with higher mindfulness may engage in more extra role behavior and have higher contextual performance and lower counterproductive work performance (Nguyen et al., 2020).

Trait mindfulness may also help employers judge how well future employees perform under pressure, as studies show that those with higher mindfulness have better performance under high workload and some even show higher innovation owing to their higher mindfulness levels, in comparison to employees with lower mindfulness (Li et al., 2021; Martín-Hernández et al., 2020).

In this age of technology our minds are constantly bombarded with information, and we have increasingly begun to disengage from our surroundings (Langer, 2014). Despite the abundance of engaging content and habitual media multitasking, we don't fully engage with our surroundings as a result we lower our mindfulness, which can then be traced to worsened job performance (Yildirim & Dark 2018). Mindfulness and resilience are a means of improving cognitive affective behavior (attitude) can help nurses in the larger sphere of difficulties and moral adversities faced in their jobs and can function to improve their functioning as well (Rushton et al., 2021)

According to Motowidlo (2003) job performance can be seen as the total expected value that the certain behavioral episodes of individuals contribute to the organization, when these behaviors are continued for a standard period of time. According to the definition mentioned; performance can be seen as a direct result of employee behavior. Job performance is inextricably linked to behavior. When an individual is unable to achieve their potential resulting adverse reaction to their mental health, this will ultimately also lead to them doing subpar work and showing despondent behavior (Deniz & Ertosun, 2015).

Not only would nurses working under suboptimal conditions be less effective at their job, but they would also be more likely to have a higher number of sick-leaves; for example, one study found that the major causes of absenteeism in Canadian nurses were because of stress and

overwork (Zboril-Benson, 2002). This type of behavioral trend can prove detrimental to the health of patients under the care of nurses. Hence the understanding of job performance in the medical field can become a pressing demand.

Many researchers in the medical field try to assess job performance and identify its key dimensions. Amongst the identified dimensions of performance in healthcare literature, job performance can be broken down into three basic behaviors, these include task performance, contextual performance, and counterproductive work performance (Krijgsheld et al., 2022). These three behaviors can be understood as: an employee's ability to complete the tasks that are given to them; their initiative to perform extra tasks to support their organization and coworkers; and their behaviors that may in fact harm the organization subsequently (Borman & Motowidlo, 1993; Campbell, 1990; Rotundo & Sackett, 2002).

The Nursing profession has historically been one of high stress whereby they not only have to work under stressful conditions but also have to function impeccably due to the high demands of their job. Especially in the case of a pandemics like the one we've seen in the present years, covid has been assessed to be highly contagious and fast spreading as compared to past pandemics of SARS-CoV and MERS-CoV by at least ten times (Ahn et al., 2020). Historically, pandemics like SARS, MERS-CoV and Swine flu, result in sudden increase in workload for frontline nurses, having to fulfill all the different roles under pressure of work can create unreasonable demands for nurses which can seriously compromise the mental and physical health of nurses while affecting efficient health care and endangering patient safety (Nap et al., 2008; Park et al., 2018; Propper et al., 2020; World Health Organization, 2019). Nurses facing these stressors in the course of their jobs also have lowered task performance (Jia et al., 2022). Mismanagement during work can have severe consequences for both patients and nurses

themselves. Studies in Pakistan show that busy work routines and difficulties balancing work and private lives creates many issues for the nursing profession which can create issues in even completing the assigned tasks much less performing extra tasks to support their colleagues, this means that a high stress work environment hinders not only task performance but may also reduce contextual performance (Munir et al., 2021).

Stressors are a natural part of the Nurse's job; these can range from having to work long night shifts to coming to terms with the emotional damage that results from daily confrontation with patients suffering and loss; working with clinically terminal patients; providing emotional support to their families and confront mortality at a daily basis can have grave consequences on worker health and subsequently on performance if not handled appropriately (Pehlivan et al., 2020; Saifan et al., 2019). Because of the work-life imbalance many medical professionals experience burnout which negatively impacts their work output and results in counterproductive work behavior (Akkoç et al., 2021). Role-Overload has been observed to increase negative mood and increase counterproductive work behavior even for proactive individuals (Zhang et al., 2019) indicating the seriousness or the problem.

Nurses' job performance is critical to the efficient working within a hospital or any medical facility, and the absence or turnover of experienced nurses can leave a tangible void in the efficient working of a medical facility, as such to maintain the wellbeing of nurses becomes necessary to retain valuable talent. An employee's intention to stay in the organization is often influenced by how well an employee feels while working in that organization (Yun & Yu, 2021). One study by Mathisen (2021) found that an estimated 10.5% of hospital staff leave within a one year period and that employee turnover in hospitals was largely preventable (especially among nurses) by improving three main factors: job satisfaction, bullying and satisfaction with work

prospects. As such empirical findings show that in order to successfully introduce healthy interventions, a workplace culture that is based on occupational health and safety is imperative and it becomes evident that strategies to improve nurses experience may improve outcomes for the nurses as well as their performance.

An individual's task performance is not only affected by what happens during work hours, rather the holistic sum of daily chores and responsibilities affect the individual, such that employees that are psychologically burdened by various aspects of their lives whether it be their work burden or family responsibilities are more likely to experience a decrease in their job performance. As such a balancing of multiple life domains is important, while mindfulness may facilitate this balancing as studied by Althammer et al., (2021), there appears to be a positive impact of mindfulness intervention on work life balance, detachment, and well-being.

A decrease in job stress, improved work conditions and work stress interventions can facilitate in managing the negative side effects of Role-Overload, which is why there is an upswing trend among companies to address the mental and psychological health of its employees and to make workplaces a healthier and safer environment (Lowe, 2020).

As mentioned in “Creating healthy organizations"; a book by Graham Lowe (2020), employee wellbeing can be directly correlated with an organization's wellbeing. The most effective strategy for improving employee well-being may be mindfulness, as studies show those with higher trait mindfulness are more effective at performing tasks and more creative problem solvers as they don't easily get overwhelmed with the tasks of their jobs and as a result experience fewer side effects of Role-Overload (Li, 2021).

Nurses that are more helpful to their colleagues and are willing to take on more challenges and extra tasks will inevitably improve work conditions for other nurses as well, this

may lead to an overall improvement in performance of everyone on staff. Mindfulness among nurses has been shown to positively affect contextual performance, which means those with higher mindfulness will be more willing to perform extra tasks and improve work conditions for everyone. Similarly counterproductive work performance is also low among nurses with higher mindfulness which is conducive to the overall work conditions in a health facility (Long, 2017).

Counterproductive work behaviors are considered as important components of work performance and can result in overall lowered quality of work output, demotivation of workers, and a demoralizing work environment (Rotundo & Sackett, 2002). Studies find that counterproductive work behaviors often result in work conditions that are detrimental to both the organization and the individuals involved (Carpenter et al., 2021). Behaviors, such as absenteeism, tardiness, or engaging in incivility have been observed in Pakistani employees to be linked to Counterproductive work behaviors (Butt & Yazdani, 2021) and further findings suggest that these can disrupt the overall functioning of a medical facility and negatively impact patient care (Arubaku, 2022) To address these issues, it is crucial for healthcare organizations to prioritize the well-being of their nursing staff and implement strategies to improve job satisfaction and reduce stress levels. (De Vries et al., 2023; Ghawadra et al., 2019; Janssen et al., 2020).

As suggested by Mathisen et al., (2021), focusing on job satisfaction and improving the psychological environment can significantly reduce turnover rates among nurses. Additionally, mindfulness as positive psychological intervention, has shown promising results in improving overall well-being and performance among nurses (Althammer et al., 2021; Janssen et al., 2020;). By encouraging mindfulness practices, nurses may experience reduced Role-Overload

and increased ability to manage stress, leading to better job performance and a more positive work environment.

Based on existing literature, it can be understood that job performance of nurses plays a critical role in the effective functioning of medical facilities; factors such as work-related stress, burnout, and Role-Overload can negatively impact nurses' performance and overall well-being. However mindfulness practices and interventions in addition to improving job resources, Healthcare organizations can foster a supportive environment for their nursing staff. By nurturing their well-being and job satisfaction, healthcare facilities can not only retain valuable talent but also enhance the overall performance of their entire workforce, leading to better patient care and outcomes.

Literature Review

Role-Overload has been extensively studied in organizational and occupational psychology. It refers to a situation where an individual has too many responsibilities or demands to complete, those that exceed the time and resources at the disposal of an individual to be able to fulfill them (Duxbury et al., 2008). In the nursing Profession this situation has been seen too often make nurses feel overburdened which can then spiral into feelings of stress, anxiety, and a sense of being overwhelmed if not handled properly (Bae, & Fabry, 2014; Maharaj et al., 2019).

When individuals experience high levels of demands they use their resources to meet the demands and perform the work (Hobfoll, 1989). However, once the demands exceed the available resources people may start to experience negative consequences as excessive work demands have been seen to predict emotional exhaustion and burnout (Akkoç rt al, 2021; Raudenská et al., 2020) and this can also negatively impact the wellbeing of employees; similar findings have been reported by other authors that workplace stress has strong negative implications for the health of employees (Zambrana et al., 2021).

Role-Overload can start the process of stress reaction which may start snowballing from being manageable and low anxiety (Mazzola & Disselhorst, 2019) to progressively becoming worse and unmanageable depression (Beehr et al., 2000). Role-Overload is related to many forms of stressors and job demands that cause job stress. One study found that adverse job conditions are often the cause of burnout for nurses (Dall'Ora et al., 2020). The strain experienced by nurses due to Role-Overload can result in lowered energy (Johnston et al., 2019); this psychological strain caused by fulfilling excessive demands can spiral out and may have adverse effects on nurses' motivation, job satisfaction, organizational commitment which further leads to occupational stress etc. (Dodanwala et al., 2022; Pitchford, 2022; Ugwu, 2022).

According to Grandey et al., (2012) this may spark a resource depletion spiral which can be linked to ego depletion (Muraven & Baumeister, 2000) and COR theory (Hobfoll, 1989).

We can assume that meeting excessive demands (Role-Overload) leads to dwindling resources which makes people vulnerable to stress, emotional exhaustion and depression (Huang et al., 2022). However, some studies show that just physical exertion is not a sufficient predictor of resource depletion, but rather fatigue can more accurately be understood in the context of motivation and attention of the employees (García-Arroyo & Segovia., 2019; Nazir et al., 2022) hence mindfulness, affecting motivation and attention, functions as an essential moderator that defines the relationship between role overlord, stress, and performance. When the key element of mindfulness is addressed the effect of Role-Overload, a stressor, can be more accurately understood on job stress and psychological distress (Bayighomog et al., 2023; Lee et al., 2020; Na et al., 2022).

Many offices and jobs push their employees to improve performance and increase profits but at the same time, fail to provide their employees with adequate rewards as compensation to the demands they meet and the efforts they put in; when research has clearly shown how important adequate motivation is for the improved performance of health workers (Lohmann et al., 2018; Rai et al., 2018). During the recent years there have been higher cases of nurse's turnover, burnout and suicides because of the extreme pressures caused by increasing responsibilities and (López-López et al., 2019). One study by Khanal et al. (2020) found that health care workers exposed to covid have a higher chance of developing psychological complications due to Role-Overload while Naushad et al. (2019) found that among health care workers, nurses have a higher vulnerability to adverse health outcomes. A study by Tahir and

Aziz (2019) found that when Pakistani employees are overworked and tired from meeting the different work as well as family demands they rate higher on stress.

Especially in Pakistan, the problem of nurses moving to more developed countries, motivated by better prospects, has become a serious issue as nursing shortages become more prominent every year while the amount of work continues to increase at an astounding rate. The present state of affairs appears to be devolving in Pakistan which may explain the increasing frequency of demoralization and turnover among nurses and prospective nurses (Madani, 2021)

It is important to note that overwork and high demands at jobs are not the only cause of Role-Overload; nor is the lack of job resources the only cause of employee susceptibility to perceiving Role-Overload as job stress. Various studies report that factors may influence the perception of Role-Overload as hindrance stressor e.g. Family support has a strong impact on employees' performance and has been linked to reduced perception of Role-Overload (López-López et al., 2019). Those who experience Role-Overload along with higher role conflict have a higher frequency of negative health outcomes (Dodanwala et al., 2022).

For those individuals that typically have low trait mindfulness, presence of Role-Overload can increase their vulnerability to occupational stress, researchers have observed how Role-Overload can instigate the occurrence of occupational stress (Bakker, 2017) and have successfully identified mindfulness as an essential buffer for the negative effects of work and Role-Overload (Na et al., 2022). Few researchers in Pakistan have also observed the negative impact of job stress as potential mediator between role related stress and job satisfaction (Khattak et al., 2011).

It has also been observed that Role-Overload directly increases susceptibility to experiencing occupational stress. García-Arroyo and Segovia, (2019) found that teachers

overloaded with work were more prone to emotional exhaustion while other studies support that Role-Overload leads to increases in occupational stress and that Role-Overload negatively affects attitudes of employees. However occupational stress caused by Role-Overload is preventable given an appropriately large resource pool.

Ismail et al., (2015) found that the individuals who are negatively impacted by Overwork-related disorders, will not be able to function effectively, because of which their work performance may suffer. Conceivably, being overloaded with different roles and tasks can be seen to function as a stressor that adversely affects performance, there is threatening potential as high influx of demands in the presence of lowered resources (e.g. time) can be detrimental rather than motivational for an individual (Purba et al., 2019).

Extensive research has shown the adverse effects of occupational stress on not only the physical and mental wellbeing of individuals but also on their performance (Deng et al., 2019; Nisar, & Rasheed, 2020) as such job Performance is greatly affected by occupational stress. Positive performance refers to the behaviors of an employee that lead to the accomplishment of organizational goals while occupational stress hinders this ability of the individuals to perform their work demands well and has been linked to many variables that also work in conjunction to negatively impact the behaviors that improve their work performance (Faraji et al., 2019; Motowidlo, 2003; Okita et al., 2017). Furthermore, many studies support that stress may significantly impair individuals by affecting their concentration, ability to pay attention and to make decisions which will inevitably affect their performance as well (Gao et al., 2017; Nisar, & Rasheed, 2020; Shapiro et al., 2005).

Occupational stress experienced by healthcare professionals can have a detrimental effect on patient outcomes. Studies have shown that elevated levels of stress can result in an increase in

medical errors and decreased quality of clinical care provided, this also affects patient outcomes (Cordioli et al., 2019; Garcia et al., 2019). Occupational stress can be caused by the excessive hours of work, this may cause a lack of sleep which reduces ability to concentrate on work, furthermore this lack of concentration can impact the performance of workers i.e. nurses working long hours often do double shifts, this reduces their sleep hours which has been linked to performance issues (Golden, 2012; Stimpfel et al., 2020).

According to multiple studies, an environment that prioritizes employee mental health and minimizes occupational stress through introduction of some key factors has been linked to improved job performance, these include: creating a type of environment where employees are provided with increased job control and decision latitude, clear and consistent work expectations, a supportive physical and social work environment, and access to supportive resources such as supervisor support and organizational support (Yousaf et al., 2020; Ziaei et al., 2019).

Employee wellbeing and quality of life can have a direct impact on the outcomes for the organization as well as employee daily functioning as such the concept of corporate wellness is now becoming mainstream. As observed by a study conducted on the Effects of Job Stress on Employees Job Performance, within the Banking Sector of Pakistan, it was found that Employee Job performance and job stress are inversely related such that those experiencing higher job stress were seen to perform worse at their job in comparison (Ahmed & Ramzan 2013).

Employees that are more engaged and less stressed not only have improved performance but are also less likely to take days off; according to a study, conducted on Jakarta employees of building and construction companies, it was found that good leadership, the placement and the compatibility of employees to their placed jobs, leads to positive employee engagement, while

these combined positive influences determine the job performance of these employees (Meswantri & Ilyas, 2018).

If a workplace neglects its worker's mental and physical health, it will result in more employees leaving their jobs, this will not only be detrimental for the workforce but will also greatly impact outcomes for the workplace (Lowers & Associates, 2018; Mvuyana, 2017). Leaving nurses will increase burden for remaining nurses which will ultimately reduce performance for those who are overworked (Drennan & Ross, 2019; Zhang et al., 2022).

Hiring and training new workers is more costly and time consuming and it would be more profitable to retain experienced employees by improving work conditions, this will reduce turnover and also improve productivity; resulting in better performance and increased profits (Allen, 2019; Lowers & Associates, 2018; Mvuyana, 2017). Furthermore, perceived workload is often correlated to turnover intentions and its negative effects are only mitigated by organizational support, this can be in the form of high involvement work practices (HIWPs) (Holland et al.,2019).

According to the Individual Work Performance scale there are three dimensions of performance; task performance defined as the ability of the worker to complete their own work tasks with proficiency (Campbell, 1990); Contextual performance which is defined as the willingness of the employee to contribute to their organization by performing tasks even outside their job description such that this behavior improves the organizational environment (Borman & Motowidlo, 1993). This altruistic behavior is essential for a positive work environment that promotes mutual trust and improves net profits which can then translate into bonuses' i.e. higher incentives for the employees; while Counterproductive work behavior are those behaviors of

employees that effectively reduce well-being within the organization" (Rotundo & Sackett, 2002).

Occupational stress can result in reduced performance, this can mean its effects on the various dimensions of performance i.e. Task performance, contextual work performance and counterproductive work performance are also significant. Studies have established the negative effect occupational stress casts on employees' basic ability to perform tasks within their job description either directly or indirectly i.e. reducing focus, causing sleep deprivation etc. (Golden, 2012; Stimpfel et al., 2020). Organizations don't just need workers that work well in isolation, rather a workplace is akin to an interconnected machine, workers who work well together and go above and beyond can not only boost output but also boost the morale of other workers (Conway, 1996; Uraon, & Gupta, 2021). Studies show that contextual performance is diminished in the face of heightened strain which limits employee's capacity to engage in altruism and compliance behavior (Palenzuela et al., 2019)

One other important facet of job performance that may be impacted by high occupational stress is counterproductive work behavior. As stress intensifies, individuals may be more prone to engage in behaviors that harm the organizational climate, such as absenteeism, conflicts, or demoralization of other employees (Suroso & Anggraeni, 2020). There is an ever-present need to understand the influence of occupational stress on both positive and negative aspects of job performance furthermore, this illustrates the need for a comprehensive strategy to mitigate stressors and bolster employee well-being through introduction of mindfulness.

When completing a task or a job an individual's complete attention on that one task is necessary for optimum results as divided attention when performing multiple tasks can more often result in blunders and mistakes especially for older adults (McDowd et al., 2020).

Multitasking is required in everyday lives, and it poses no significant problems, however, when professionals perform important tasks, their undivided attention is not an option but a requirement. Especially in the case of nurses, there is a higher need for mindful performance as a mistake with a patient can be very dangerous if not fatal, while Role-Overload can severely impair mindful performance (Duxbury et al., 2008; Mittal & Bhakar, 2018; Tang & Vandenberghe, 2021).

Role-Overload can place heavy demands on the mental capacity of individuals as performing tasks uses working memory (Vaughan & Laborde, 2021) and excess demands, as in the case of Role-Overload, can increase likelihood of distraction. Orhan et al. (2021) found that the level of distraction experienced can be linked to the reduced self-regulation and work engagement and as various studies have surmised, distraction can be highly detrimental to performance (Dane, 2015; Masood et al., 2020).

In addition to occupational stress, nurses are often overworked as the need for nursing care is on the rise in most countries especially due to the recent pandemic (Cole et al., 2021; Marć et al., 2019; Propper et al., 2020). Furthermore, it has also been observed that during the past decade the ratio of elderly population has been on an incline which has resulted in higher demands for nursing care in the elderly community (Marć et al., 2019; Plöthner et al., 2019; Song, & Tang, 2019; Van der Heijden et al., 2010).

The demand for nurses has steadily increased but as workload has significantly increased, compensation has remained low (Cole et al., 2021; Marć et al., 2019). Many nurses have higher burnout rates and experience Role-Overload as a result and due to this, numerous nurses have resorted to changing professions (Yun & Yu, 2021). Role-Overload has become a major concern among nurses; these factors are bound to affect their job performance through reduced work

engagement leading to even more stress and reduced physical and mental health, however perceived organizational support can mitigate its negative outcomes (Wexler & Schellingeret, 2023; Zhanget al., 2021).

Role-Overload can occur not just as a result of overburdened work it happens in conjunction with various other life roles. It may seem improbable to reduce stress in such an essential work as nursing, however it would be worth investigating the difference between performance among workers that receive more breaks, have shorter work hours and support at home. As, in addition to work stress, there is also uncounted stress that builds up because of non-work stressors i.e. family, home, friends, and various other life obligations (Sørensen et al., 2021).

Another one of the primary disruptions that occur as a result of Role-Overload is to sleep, nurses have to care for their homelife as well after the end of their long shifts, as such they may view ‘getting a full night’s sleep as nonessential, in favor of finishing home chore. This cycle of overwork and lowered health will inevitably impact their work performance as well. According to Lonnie Golden in her series 33 “conditions of work and employment”, there may be grave consequences of overtime work, as according to her; 10% increase in overtime leads to a decrease in productivity by 2.4 % per hour (Golden, 2012). As such, it may prove essential to scrutinize and explore ways of reducing stress and improving performance among nurses, one of which may include incorporating shorter shifts to reduce sleep deprivation, resulting in improved concentration and performance.

In cases where it may not be feasible or at all possible to reduce working hours as is the case due to the current nursing shortage (Marć et al., 2019), it may prove useful to teach nurses techniques and therapies to manage their own stress and improve wellbeing so that they are still

able to function well under stressful conditions. One of the simplest and most popular, effective techniques may be practicing mindfulness (Ghawadra et al., 2019; Jha et al., 2019).

A feeling of futility and pointlessness is often accompanied by unfulfilling, unchallenging jobs; however, when jobs and life itself becomes too challenging it may result in feelings of Role-Overload. Workers in assembly lines often feel that the repetitive actions in their jobs are tedious, these jobs are embodiments of boredom and futility. The feeling of tediousness is not only found in assembly line jobs, rather many other jobs instill these feelings in the employees i.e. teaching, medical profession, banks, finance etc., in fact majority of skilled work causes frequent burnout. According to surveys, it has been observed that around 70% of the workforce currently hates their work, which can mainly be attributed to repetitive routines and unchallenging work. Role-Overload is conceived as a specific stressor when the demands, work and life related, exceed personal resources (Eatough et al., 2011).

Individual perception of Role-Overload may differ largely; depending on individual characteristics and circumstances they may be better able to change and accept in order to deal with the stress (Rabenu & Yaniv, 2017). Role-Overload is a stressor, however whether it is appraised as negative or positive depends on an individual's intrinsic characteristics; where some may be more predisposed to the negative side effects of Role-Overload, resulting in role stress, others may be less affected by it and register it as a challenge stressor instead. Challenge stressors have long been observed to have a positive effect on individuals' performance rather than harming it. What Role-Overload, as a challenge stressor, may do for some individuals is to increase their motivation, make them more resilient, promote emotional and mental growth, which may inevitably improve their performance (Lin & Ling, 2018).

Some conditions need to be met for Role-Overload to act as a motivational stressor rather than a demotivating stressor, one of the most prominently identified contributors is an individual's mindset. For example an optimistic and positive apprehension of one's prognosis in cases of cancer has literally been linked to better prognosis as a systematic review of 15 studies on cancer patients found that among 5,249 patients, there appeared a clear connection between dispositional optimism and the quality of life of cancer patients, those who had a more positive and optimistic attitude towards their illness had better mental and physical health (Marton et al., 2022).

Similarly, McGonigal (2016) argues in her book that stress does not necessarily impede personal growth and well-being.in another study rather according to her some research findings find that the promise of a positive outcome can often be a self-fulfilling prophecy. McGonigal recounts how one research found that women working in hotels as cleaners felt more exhausted and unhealthier due to their work, but when they were informed of how their work could positively impact their health because of how much exercise they were doing they actually started to feel healthier and even lost more weight compared to those that weren't informed of the positive outcomes of their works.

Another important condition to be met for Role-Overload to act as a motivational stressor is the amount of mental resources spent and gained; as can be corroborated with the COR theory, a net resource gain even at the cost of some resource spending i.e. exhausting resources to attend workshops, or sharing knowledge, knowledge being a resource, can lead to a net resource gain in the long term and this consequently improves job performance (Tran, 2019).

When people experience a situation where their abilities are pushed to the limit or when they feel they are facing a daunting task, they experience a stress response, how they respond to

the stressor determines whether it has negative implications or not (Ma et al., 2021). With positive affirmation and a determined mindset, the stress response to a situation can actually help push people to perform beyond their average capabilities (Rushton et al., 2021). However, everyone has a different threshold for bearing challenging situations (Justo Alonso et al., 2020) and has varying levels of personal resources (Li et al., 2021), in such cases mindfulness can increase this threshold so that higher levels of stress can be handled without experiencing negative side effects (Liang & Zhang, 2021).

Many studies have shown that experiencing challenging situations and successfully navigating through them can have positive implications for children as well adults similarly Role-Overload can function to increase rather than decrease performance through increased motivation for those with higher threshold and higher mindfulness (Layous & Nelson-Coffey, 2021; Lin & Ling, 2018).

Both challenge as well as hindrance stressors produce a stress response and mindfulness can be instrumental in improving the metabolization of that stress. Many studies find that among individuals experiencing Role-Overload, the presence of certain character traits may mitigate its effects on stress response; Perrewé (2005) argued that the negative relationship between Role-Overload and strain (stress) can be buffered by certain skill, these skills were termed as “Political skill” which are often characterized by the ability of individuals to modify their behavior as needed in different situations as well as awareness and perceptiveness of their social environment. These same skills are also observed in individuals with higher mindfulness as such we can extrapolate based on literature that mindful traits can help mitigate the negative effects that Role-Overload has on job stress (Brewer et al., 2013; Gawande et al., 2019; Lu et al., 2020; Perrewé et al., 2005; Schuman-Olivier et al., 2020).

Mindfulness can also help us identify how some individuals have higher tolerance in comparison to others, as it is well documented that those with higher mindfulness tend to be better at coping with stress, as such it would not be too presumptuous to propose that those with higher mindfulness tend to perform better as a result of Role-Overload as they can benefit from the motivational effects of Role-Overload while mitigating the negative effects caused by stress (Lin, & Ling, 2018; Martín-Hernánde et al., 2020).

When those with higher mindfulness experience Role-Overload their stress levels will not spike and as a result their performance will not be negatively affected and an extensive review of literature supports this beneficial effect of mindfulness on workload stressors (Grover et al., 2017; Klocko & Wells, 2015; Montani, 2018; Tang & Vandenberghe, 2021). Those with high Trait Mindfulness are often less affected by the presence of excessive work demands while these demands may cause anxiety, stress, and depression in those with lesser amounts of mindfulness (Li et al., 2021). Not only are mindful individuals less likely to be afflicted by mental illness, research shows that increased mindfulness also improves their creative functioning (Montani et al., 2020).

Mindfulness is a personal resource that helps you reduce stress (Grover et al., 2017; Ghawadra et al., 2019) it can be understood as human capacity to be conscious and aware and completely present in the moment; of having complete bearing of the present state of affairs and to not react in a startled manner and become overwhelmed by unexpected circumstances (Brown & Ryan, 2003, p. 822; Epstein, 1995; Glomb et al., 2011, p. 118). Various studies find that increasing mindfulness in individuals leads to them being better able to cope with higher work demands and Role-Overload and be less negatively affected by them (Na et al., 2022). Mindfulness as a trait is also necessary for increasing the capacity of working memory, which

will result in improved performance and decrease perception of Role-Overload. However, it should be noted that it is not effective as a one-time practice/session and unless it is diligently applied it will not give expected results (Quek et al., 2021)

According to Hyland, Lee, and Mills (2015), it makes you more effective at your job, as discussed in their paper; mindfulness cultivates positive character traits that may also help with your job; it makes you focus your attention on the present moments, making you more aware of your surroundings and be more open to new experiences by fostering a non-judgmental attitude and helps you be more in control of your emotions and behavior (Baer & Lykins, 2011; Vago & David, 2012).

Mindfulness acts as a buffer between the stress felt by workers and their resultant performance, since those with higher mindfulness have lower chances of mistakes and increased safety performance (Liang & Zhang, 2021). It also reduces the perception of potential stressors and protects you from feeling overwhelmed (Grover et al., 2017). As such with the help of this psychological resource nurses working in a high stress environment may be better able to cope.

Mindfulness can also lead to a variety of additional beneficial gains that may prove useful in managing stress and improve job performance. It improves and increases resilience (Rupprecht et al., 2021) which is further conducive to coping with adversity and hardship (Badu et al., 2020). Mindfulness along with resilience improves moral competence and work engagement among nurses (Rushton et al., 2021). Workplace stress and resilience are interconnected, healthcare professionals such as nurses and doctors experience stress as a regular part of their jobs however by employing resilience as a coping method, using organizational resources, and implementing mindful strategies they are better able to combat stress (Badu et al., 2020). Mindfulness in conjunction with other related positive variables such as gratitude also

serve to buffer the effects of job stressors on performance, it elucidates positive downstream growth as observed by researchers (Montani et al., 2020; Van der Riet et al., 2018)

Mindfulness has shown to positively influence psychological health by reducing depression, burnout, and anxiety; furthermore, it shows promising benefits in improving individuals Job performance by increasing creativity, engagement, and motivation (Panditharathne & Chen, 2021). There are evidence-based studies that allude to the importance of mindfulness in the life of doctors and nurses, healthcare professionals have been observed to have significant reduction in their stress, anxiety, and burnout levels. individuals from various other professions also attest to the beneficial effects of mindfulness as such mindfulness may not only function as an effectual stress preventive and health promotive intervention but may also lead to improved care of patients (Van der Riet, et al., 2018).

The personal circumstances of working nurses can also impact the mindset of nurses. Higher educational background improves the ability to perform a job as can be corroborated with several studies, nurses with more knowledge in their field due to higher education will definitely be better able to respond to the needs of their job, as higher education provides them with better skills and up to date knowledge that better equipped them with the confidence to provide quality nursing care service (Islam et al., 2019) . With age and experience the ability of nurses to provide higher quality service also increases as work-related knowledge increases with higher number of years in the same industry, confidence in their own abilities also increases which may result in them being more relaxed in their roles to perform the work they need to do, as such experience could possibly lead to improved performance (Islam et al., 2019).

Married women however are usually under more pressure and are likely to experience higher amount of stressors, In Asian culture females are expected to handle the matters of the

house and in many cases they are solely held responsible for the children's wellbeing, these expectations do not change even for working women, as such working married women are even more prone to Role-Overload (Halinski & Duxbury, 2022; Vatharkar & Aggarwal-Gupta, 2020).

Research on Role-Overload primarily focuses on the negative outcomes due to Role-Overload however few research findings may point to a more complex nature of the effects of Role-Overload. Role-Overload functions as a stressor to create vulnerabilities, which may facilitate Occupational stress, however many other factors can influence the negative outcomes for nurses, workers etc. It would be more rational to consider the possibility of keeping a more open-minded view of Role-Overload and systematically identifying the variables that contribute towards a negative effect in the presence of Role-Overload, hence there may be more nuance to discover on how Role-Overload may affect performance and stress. Some studies find interesting results when examining Role-Overload while controlling for buffer variables i.e. For instance, one study found that increased psychological strain due to Role-Overload was being buffered by higher leader–member exchange but the same could not be said for role ambiguity or role conflict (Tang & Vandenberghe, 2021). Another study found a mixed effect of Role-Overload on extra-role performance when moderated by the quality of leader–member exchange, their findings show that Role-Overload can function as both a hindrance as well as a challenge stressor, when a positive effect from the moderator was present, their job crafting increased leading to better performance (Huang et al., 2021). As evidenced by various research findings a general assumption can be argued that Role-Overload may not necessarily be directly responsible for an increase in negative outcomes, however it may be creating vulnerabilities that could elucidate its adverse downstream consequences. The present study unveils some of the working mechanisms of Role-Overload to identify how to mitigate its negative influence by exploring the

role of mindfulness as a protective factor and a personal resource. Mindfulness not only functions as restorative for workplace stressors but also for Role-Overload, as such it can be surmised that mindfulness may be helpful in improving the prognosis for individuals experiencing Role-Overload (Janssen et al., 2020). The findings of the study could create further incentive to implement mindfulness to increase beneficial outcomes for nurses dealing with stress. (Janssen et al., 2020) and help us understand the precarious position of Role-Overload (Huang et al., 2021).

Theoretical Framework

The complex interplay of moderation and mediation effects of mindfulness and occupational stress on the relationship between role stressor and performance can be more easily understood with the help of theoretical frameworks as explained below.

The Affective events theory

Employees that are overworked and overloaded may experience more negative emotions and worse moods, this will eventually impact their work outcome; that can range from their performance, physical ability to perform job and turnover intentions etc. (Lee et al., 2020; Nazir et al., 2022; Tang & Vandenberghe, 2021). The Affective events theory supports that emotions experienced by nurses as well as their moods during working hours have strong implications on their performance and job stress (Van der Riet et al., 2018).

Weiss & Cropanzano introduced the Affective events theory (AET) in 1996, they proposed in their book "Affective Events Theory: A Theoretical Discussion of the Structure, Causes and Consequences of Affective Experiences at Work" that when an individual experiences an emotional response to an event, this experience is elemental in determining their attitudes and behaviors. When individuals experience a negative emotion due to external as well

as internal causes, these emotions can then cause the individual to either act or behave in a way that is not conducive to productivity.

When an employee is frustrated or angry for whatever reason, they may not perform well; for example, in a customer service role, a frustrated employee will be short with customers. Similarly in the context of overwork among nurses, Nurses report working on average 8-12 hours a day; in Pakistan, and in the private sector they can work overtime to earn more (Hamid et al., 2013). These hours are filled with extremely busy schedules on top of accommodating incoming patients, on average the number of people visiting hospitals in a day has seen a massive increase in recent years especially with the recent pandemic (Propper et al., 2020).

Role-Overload may affect performance among nurses by causing sleep deprivation, which will ultimately affect their moods and behaviors, as nurses' busy schedule is not only taxing for the mind but also affects their sleep schedule. One study estimated that on average nurses sleep less than 7 hours when they have to work the next day, this poor sleep is also positively correlated with poor patient care (Stimpfel et al., 2020). Similar observations have been made with dementia patients' caregivers, who have been observed to experience disrupted sleep caused by Role-Overload (Liang et al., 2020).

AET may also suggests that in addition to the burden and emotional exhaustion caused by working extended hours; having to combat extreme levels of stress caused by facing human mortality daily, in the form of terminal and critical condition patients, can build up and cause a vast array of negative attitudes and behaviors among nurse; as research shows that Palliative care clinicians who have to face patient suffering as they take care of those with terminal illness face high levels of moral distress. (Rushton et al., 2013)

Studies from Pakistan also support the AET theory where Role-Overload can result from extended working hours; they find that employees that report higher stress and lowered organizational commitment due to Role-Overload have higher rates of resignation and lowered performance (Azeez & Omolade, 2013; Naru & Rehman, 2020; Shahzad et al., 2020). While having long work hours have been shown to positively correlate with a number of adverse nurse outcomes i.e. higher occurrence of patient safety accidents as well as lowered perceived patient safety competencies (Son et al., 2019)

Additionally, AET theory proposes that positive emotional experiences, such as feeling a sense of accomplishment or fulfillment, can have the opposite effect, the positive emotion will cause positive attitudes and behaviors. Mindfulness has been known to initiate psychological processes such as savoring and reappraisal of difficult situations (Garland et al., 2015). Mindfulness according to AET should also function to promote positive emotional experiences and as such it should also help in combating negative emotions from emotional exhaustion functioning to promote the health of nurses. Additionally among nurses positive emotions can be promoted in the form of appropriate compensation for the hours they work and appropriate rewards for their different accomplishments, furthermore it is also important for healthcare organizations to create a work environment that promotes employee wellbeing by incorporating appropriate breaks, giving holidays, and implementing health programs; one such important measure that hospitals can introduce is mindfulness training and promoting mindfulness through increased job control as job control and mindfulness go hand in hand etc. (Martín-Hernández, et al., 2020) As such it is necessary to address both the physical demands of the job as well as the emotional well-being of nurses to reduce the risk of overwork and its negative consequences.

Conservation of resources theory

COR theory (Hobfoll, 1989) provides a comprehensive framework, for understanding human motivation, which is to acquire, retain, protect, and increase resources; this can be done by analyzing how an individual reacts to a stressful situation and what he/she deems as an important “resource” to manage the resulting damage and improve his/her condition. (Buchwald, 2003). According to COR theory resources can range from physically and practically useful things like; medical care, housing arrangements, money etc., to personal characteristics like; resilience, resourcefulness, intelligence, experience etc. and even social support from friends/ family/ neighbors is considered a resource.

COR theory characterizes stress in a larger context in comparison to previous theories, at its core COR theory aims to improve our understanding of stress. According to COR theory, stress is not simply something an individual experiences and evaluates based on personal appraisal of events in isolation from external factors, rather it has its roots growing from the underlying social and cultural environment experienced by all the individuals of that culture. When someone in a society experiences stress, they don’t view it solely from their own solitary point of view, nor do they appraise it based solely on their unique wants, rather the socio-cultural expectations and demands of resource acquisition and retention has a major role in determining what the individual considered to be stress. And the ultimate use of resources acquired, is for them to aid in the survival of an individual in the whole collective cultural sphere. When people in a specific cultural context are not able to achieve the same goals and fulfill the similar expectations as others in their cultural sphere, they feel stress.

Role-Overload is often considered taxing, according to conservation of resources (COR) theory, because it depletes resources in an environment where demands have exceeded an individual's personal resources (Hobfoll, 1989, 2001). Usually, the lower the net resources of an

individual, the more likely they are to continue to have low resources. Role-Overload can be dangerous as it starts the process of stress buildup in the form of anxiety and psychological strain etc. (Mazzola & Disselhorst, 2019) which starts resource depletion among the employees who may as a result feel low on energy and resources, resulting in increased job stress. This will put them on a loop of chain reactions; of continuing to have low resources because of stress and then continuing to have stress because of low resources, in other words: a loss spiral (Dodanwala et al., 2022; Halbesleben et al., 2014)

Role-Overload in the context of present research means that nurses experience psychological strain, as they are not able to fulfill the demands of their jobs and other roles with their limited time and resources. As such Role-Overload makes fulfilling the same resource acquisitions/retention requirements as other people in their social sphere, difficult for them. For those trying to achieve the same number of resources as others in their environments, Role-Overload can start the process of psychological strain and hence be perceived as a hindrance stressor. According to COR theory, Role-Overload may initiate the process of resource shortage. When nurses are put in a situation where they constantly have to expend resources such as their time, skills, and energy for both their jobs as well as other roles in life and are not offered enough opportunities or respite to recharge on resources, this process leaves them vulnerable to future threats. Hence by being in a situation that causes resources loss, they become vulnerable to more resource's loss.

Loss spirals, according to Hobfoll (1998), emerge when resources are depleted and hence unavailable to deal with future loss risks, potentially leading to more loss. Individuals, groups, and communities are more sensitive to the negative effects of ongoing resource constraints as a result of the initial loss. Those with more resources will be at an advantage and be more resilient

as compared to those who start out with a smaller resource pool (Jia et al., 2023), however even those with abundant resources will face challenges as a result of continual resource loss (Ojo et al., 2021). As a result, loss spirals are a potent force that can be seen in people and communities who are already short on resources.

In the context of the current research loss spirals occur as a result of Role-Overload and occupational stress, because Role-Overload causes resources to be used at a high rate, individuals resort to using internal resources, however these resources are also being used to combat stress from the occupation, this consecutive resource drain will quickly lead to depleted resource pool, making individuals more susceptible loss spirals (Kim et al., 2023). Among nurses this Role-Overload will result in reduced job performance (Basirun et al., 2019)

A healthy mind resides in a healthy body, and if both body and mind are being negatively affected by occupational stress, an individual falls victim to a resource loss spiral. As the stress of the job makes it harder for the individual to generate enough energy and resources to combat the present threat of declining body and mental health, this makes it nigh impossible to make enough resources to “save up” for a future threat, which is sure to follow due to the declining physical and mental health. Due to this, people fail to get out of a slump, and without external support their condition continues to worsen. (Zhang et al., 2022)

One of the preventative measures that is often used to deal with stress and increase a resource pool is mindfulness. Mindfulness can change how people perceive a stressful event and can help them be more effective at dealing with it. In the present research mindfulness is valued as a personal resource and in accordance with COR theory, mindfulness can help with the process of resource acquisition, while also functioning by itself as a resource as well. Mindful individuals often have a higher presence of mind and are better able to judge what may be

necessary for them to succeed in their society as such they can better identify the course of action required to attain and retain resources. Furthermore, mindfulness helps in managing stress, so it mitigates the process of resource loss. Mindfulness has been associated with positive psychological processes i.e. resourcefulness, resilience etc. (Garland & Fredrickson, 2019), all of these have been shown to help with resource gain, hence mindfulness improves mental clarity by functioning as a resource. According to COR theory, an individual's appraisal of a stressful situation is affected by their resources pool, meaning that those with higher mindfulness will have a different appraisal of a stressful situation and their coping mechanism will be affected by it as well.

With enough resources individuals can not only succeed at combating job stress but rather flourish in the presence of Role-Overload. This may mean that those who experience Role-Overload may end up with higher net resources than the resources spent in overcoming the stress of Role-Overload as studies show that although Role-Overload causes psychological strain and anxiety, it often does not significantly correlate with depression, especially in the presence of resilience, mindfulness, and gratitude (Nah et al., 2021; Tang & Vandenberghe, 2021; Ugwu, 2022). Studies also find that Role-Overload can sometimes even be positively related to job security, however not many studies examine the intricacies of how this relationship functions (Altinay et al., 2019). As such the present study aims to shed light on the positive effects of mindfulness and negative influence of job stress within a conservation of resource perspective.

Mindfulness-to-Meaning Theory

People who are emotionally sound, perform better at work (Janssen et al., 2020). Mindfulness, according to Mindfulness-to-Meaning Theory, allows one to decenter from stress assessments into a metacognitive state of awareness that broadens attention to previously

unnoticed pieces of information about one's life, allowing for a reappraisal (i.e., reframing) of adverse circumstances that reduces distress and promotes positive emotions (Garland et al., 2015).

Mindfulness to meaning theory (MMT) emerged as a result of a growing need to specifically understand the causal relationship created between mindfulness and improved psychological health; this theory was introduced by Garland et al. (2015) to fill the gap between our understanding of mindfulness and its downstream effects on the human psyche. It identifies different ways that mindfulness allows one to achieve greater happiness and psychological growth.

According to MMT, mindfulness initiates the cycle of Decentering, broadening of awareness, reprisal (perspective shifting) and savoring; these states will gradually transform individual perspective from having momentary states of meta-cognitive awareness and self-transcendent positive emotions to long term and more permanent dispositional mindfulness.

For nurses carefully performing their roles, mindfulness can help transform their moment by moment heightened awareness and attention during the job into a consistent state that can reframe their thinking to a greater appreciation of their lives to find more selfless happiness and meaningfulness. Mindfulness expands self-awareness, such that employees of an organization find wider meaning and their own impact on the world, to see previously ignored contextual data i.e. it helps them reappraise experiences in a more meaningful light. Nurses in the medical setting can benefit greatly from practicing mindfulness, as increasing mindfulness can increase awareness of the meaningfulness of their lives. A nurse's job greatly impacts the lives of many people. Broadening awareness of their influence on the patients' lives can not only help nurses feel more fulfilled in their jobs (Ghawadra et al., 2020; Kurniawan et al., 2019), it can also help

with compassion fatigue caused by empathetic caregiving (Pérez et al., 2022), resulting in more satisfied patients and improving patient outcomes. As a study on Pakistan's nurses found that their wellbeing was of utmost importance in the relationship between job satisfaction and job performance (Abdullah et al., 2021)

The savoring cycle of MMT leads to a greater appreciation and awareness of pleasant experiences, these experiences may help individuals distance themselves from painful experiences and find greater significance beyond their own hardships. The savoring cycle initiated by the mindfulness to meaning process can also be the cause of a shift in perspective. Such that in the face of adversity, employees can find the opportunity for psychological growth. Nurses in particular may be able to leverage their vast experience of observed patient suffering and recovery into a profound appreciation of human resilience. Consequently, they are better equipped to savor their own well-being even under high Role-Overload and derive inspiration from the strength exhibited by those under their care.

According to MMT, a rise in good emotions generated by increased mindfulness, reprisal, and savoring; should allow nurses to minimize occupational stress while also enhancing performance (Van der Riet et al., 2018). As well as help them reframe their Role-Overload as an opportunity to do even better. Garland et al., (2017) used longitudinal data from a randomized study comparing the effects of mindfulness-based stress reduction (MBSR) and cognitive-behavioral treatment (CBT) for social anxiety disorder to test the mindfulness-to-meaning theory. The results of MBSR were more promising than those of CBT, with considerable gains in decentering and awareness.

Trait mindfulness, when high, in nurses should allow for more control over stress perception and Role-Overload, as those with higher mindfulness may have increased awareness

to be able to appreciate the end result of having a lot of work to do while also being less affected by demotivation caused under the high workload environment (Ghawadra et al., 2019; Janssen et al., 2020). Being better able to perceive their situation in a good light may not just result in reduced stress but may also make them more conscious of the needs of their colleagues, acting with a higher level of awareness and providing better nursing care to patients. As evidenced by research, increased mindfulness directly correlates with improved contextual performance in nursing (Şahin et al., 2020). Mindfulness consistently emerges as a positive predictor of mental well-being and overall performance.

Job demands-resources model

Every job has both demands and resources, where job demands are the psychologically or physically taxing part of a job and the resources are the useful and helpful parts of a job that reduce the burden, and aid in fulfilling, the demands presented in any given job. Job demands, such as work pressure and occupational stress, can trigger a health-impairment effect, leading to undesirable outcomes, the like of which may vary from emotional weariness to burnout; according to the JD-R model this can significantly impact job performance as well (Demerouti et al., 2001). Job resources usually initiate a motivational process, predicting good outcomes such as job engagement and performance while at the same time reducing and restricting the negative effects of job demands (Bakker & Demerouti, 2017). Job resources of nurses may include the likes of adequate staffing, opportunities for professional development, and supportive work environments.

We can categorize Role-Overload as a ‘job demand’ when relating it with the JD R model. When individuals do not have adequate resources in response to Role-Overload (demand), they develop health impairments e.g. stress, depression, anxiety, burnout etc. (Bakker

& Demerouti, 2007; Coetzer & Rothmann, 2007; Sulsky & Smith, 2005) .Role-Overload depletes resources to manage them and when they have to exert high effort while presented with rapidly disappearing resources that are not sufficient to manage them, they will experience a stress response, this means that they become vulnerable to occupational stress as a result of the experienced demands (Bakker & Demerouti, 2007; Demerouti et al., 2001).

According to the JD-R model individuals need resources to manage job demands, these resources usually come in the form of job resources. However, resources are not only limited to the ones provided by the organization; rather, in addition to job resources, individuals also possess personal resources that they can use to combat the strain caused by job demands and initiate the process of personal growth (Janssen et al., 2020). Xanthopoulou et al. (2007) explored the existence of personal resources and expanded the JD-R model according to her the JD-R model could not fully incorporate all the elements that affect the job demand and strain relationship, however by incorporating personal resources in addition to the job resources the relationship could be more fully understood.

Personal resources exert influence on how an employee utilizes the resources provided to him by the organization (Bakker & Demerouti, 2007; Xanthopoulou et al., 2011). Mindfulness as a personal resource in the JD-R model functions to enhance utilization of job resources to reduce exhaustion and strain of Role-Overload that results in job stress (Bakker & Demerouti, 2007; Grover et al., 2017; Xanthopoulou et al., 2011). Mindfulness not only enhances focus and centers attention, preventing individuals from becoming overwhelmed by demand pressures and losing sight of immediate solutions, but also shifts the perception of job demands. Schaufeli and Taris (2014) suggest that personal resources like mindfulness may alter the perception of job demands rather than merely influencing the use of job resources. This recalibration allows employees to

concentrate on present issues, thereby reducing the psychological weight of job demands (Feldman et al., 2010) and heightening awareness of pertinent job resources for current needs (Grover et al., 2017).

Mindfulness offers a unique perspective of resources in the JD-R model just as Role-Overload offers a unique perspective of job demands. Job demands do not necessarily result in negative consequences; as in the case of Role-Overload, having several responsibilities might have a good motivational effect depending on whether a Role-Overload is a challenge or a hindrance job demand (LePine et al., 2005). Even though both challenge and hindrance demand cause strain, challenge demands are viewed as opportunities for growth and so have a motivating effect, whereas hindrance demands are viewed as roadblocks to achieving personal goals and hence cause negative strain (Cavanaugh et al., 2000).

One study investigated whether Role-Overload and underload caused different negative health consequences, and the results showed that among respondents; both work overload and underload caused significant levels of poor health outcomes, with the Role-Overload group reporting the most (Shultz et al., 2010). Workload has been proven to have a beneficial effect on emotional weariness and a negative effect on work engagement in the nursing field (Van Bogaert et al., 2017). Another study discovered a link between Role-Overload, role conflict, role ambiguity, and occupational stress that was significant, linear, and favorable (Karimi et al., 2014). As a result, if Role-Overload is linked to a job demand, it is clear how it might negatively impact an individual's well-being. Mindfulness as a personal resource may be useful in decreasing the impacts of Role-Overload, which can be harmful to one's health.

Rationale of the Study

The present researched aimed at understanding the intricate interplay between Role-Overload, mindfulness, job stress and job performance. Role-Overload has been observed to function as a detrimental stressor; as such it should have a negative impact on Job stress (Bakker, 2017). Research however is convoluted on the impact of Role-Overload on performance as it is sometimes observed to reduces performance due to its detrimental effect (Pitchford, 2022; Tang & Vandenberghe, 2021), while sometimes it functions as a challenge stressor improving performance (Huang et al., 2021; Lin & Ling, 2018; Mittal & Bhakar, 2018). This gap in understanding needs further clarifying as such the initial objective in this research was to see if it has a causal relationship with job stress and job performance, in order to establish a base understanding of these variables to see if findings align with literature (O'Brien, 2019; Tang & Vandenberghe, 2021; Wo et al., 2019), as well as to improve the limited literature in Pakistani nurses context (Rafiq et al., 2021).

There is extensive research of each of these variables individually however there is a gap in literature on how the relationship between these variables may change with the variability in others. For example, in this research the aim was to investigate the moderating effect of mindfulness on the relationship between Role-Overload and job stress, there is a deficiency in research carried out in the nurse population that study this effect, research studies focus on personal resource moderators, only a few including mindfulness, that may lessen the effect of demands on burnout/stress (O'Brien, 2019; Ugwu, 2022; Wu et al., 2019; Yip et al., 2008), while most researches on mindfulness among nurses study it as buffer between stress/stressors and various outcome variables, i.e. health, performance, job satisfaction etc., separately (Akkoç et al., 2021; López-López et al., 2019; Wexler & Schellingeret, 2023; Zhang et al., 2022). This research aims to fill this gap.

Existing literature on this topic is more focused on understanding the effects of Role-Overload and job stress as similar (Becker, 2021), as such fewer studies focus on the moderated mediation with mindfulness moderating the mediating role of job stress. This research sheds light on the role of occupational stress as an essential strain pathway that is moderated by substantiating the idea that Role-Overload tends to decrease functioning, including job performance, when mediated by occupational stress (Mittal & Bhakar, 2018; Tang & Vandenberghe, 2021) but the effect is significantly reduced in people with higher mindfulness.

This research also expands the personal resource literature in the context of job demand-resource model, and conservation of resources model whereby mindfulness functions as one such resource (Bakker & Demerouti, 2007; Hobfoll, 1989). There has been a high demand to explore mechanisms through which role stressors affect performance (Gilboa et al., 2008). By studying Role-Overload within the context of conservation of resources model (Hobfoll, 1989, 2001); the current research focused on Role-Overload as a stressor that has presumably challenging and threatening potentials (Eatough et al., 2011) especially among Pakistani nurses.

The study clarifies how individuals with low resource reservoirs are vulnerable to loss spirals, resulting in deteriorating mental health and detrimental outcomes for performance. This research explains Role-Overload as one such cause for a loss spiral among nurses and how it may lead to further resource loss that can impact their performance (Trujillo, 2022). Studies on loss spirals are numerous however, there is a gap in literature that this research hopes to fulfill, that is the lack of literature on Role-Overload as a contributor to loss spirals due to its nature as a stressor as opposed to stress.

The present research offers a nuanced understanding of how Role-Overload functions as a stressor but is different from conventional stress/strain (Huang et al., 2021).Where some

researchers identify Role-Overload as a hindrance stressor, others find that daily unattained tasks (due to demands exceeding time and ability) boost job performance for those having higher mindfulness, by motivating them to perform better (Huang et al., 2021; Petrou, 2021). This discrepancy in literature requires some clarity that this research hopes to provide.

Furthermore, this study expands the "mindfulness to meaning theory" in the context of Role-Overload, demonstrating how mindfulness leads to a reprisal of Role-Overload, contributing to reduced job stress and improved job performance, enhancing our understanding of how role stressors impact performance. Research on understanding the positive influence of Role-Overload when paired with mindfulness is lacking in nurses (Chheda, 2020)

It is important to explore how mindfulness enhances nurses' decision-making, attentiveness to patients, and overall job satisfaction. The present research contributes to the literature by highlighting that mindful nurses exhibit improved focus, presence of mind, and the ability to function well under pressure, thus expanding the AET theory. This is particularly crucial for nurses who must meet high performance standards to ensure optimal patient care, as their performance directly impacts patient outcomes (Stimpfel et al., 2020).

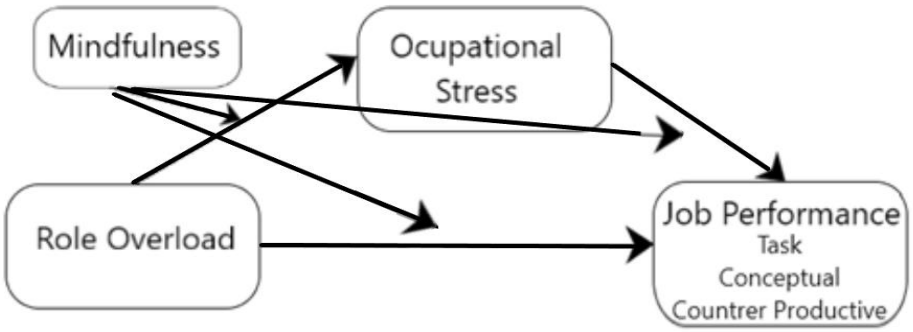
Lastly, research on factors affecting relationship between Role-Overload and job performance within Pakistan have, in the past, focused primarily on various organizational sectors (Ahmed & Ramzan, 2013; Naru & Rehman, 2020) along with the few existing ones on related concepts (Bano et al., 2023; Butt & Yazdani, 2021; Hamid et al., 2013; Hanif & Naqvi, 2014; Nazir et al., 2022; Shahzad, 2019), however this particular body of knowledge is understudied in the nursing population of Pakistan, which is why more research is needed in this area. Given the heightened anxiety and stress in a post-COVID world, studying nurses, who face

greater stress levels than the average person, becomes increasingly important. As such this research aims to fill need for more research in Pakistan nurse population.

Overall, this research provides valuable insights into the role of mindfulness as a personal resource in the context of Role-Overload, occupational stress, and nursing performance. By addressing gaps in existing literature and emphasizing the significance of studying nurses within Pakistan's healthcare sector, it contributes to our understanding of how mindfulness can enhance performance and well-being in high-stress environments.

Figure 1

Conceptual Framework



The underlying framework of this thesis posits that within the nursing profession, the phenomenon of Role-Overload serves as a significant determinant of Job Performance. It was hypothesized that the multifaceted nature of nursing roles, encompassing various responsibilities and demands, often leads to a state of Role-Overload among practitioners. Consequently, this was anticipated to exert detrimental effects on multiple dimensions of job performance, including both task-oriented and contextual aspects, while also causing an increase in counterproductive work behaviors among nurses.

The experience of Role-Overload also contributes to heightened levels of occupational stress. And this heightened stress was anticipated to detrimentally impact the various dimensions of job performance. As such, in this research it was predicted that Role-Overload impacts job performance going along a mediated path through occupational stress. However, mindfulness was proposed as a potential moderator in this relationship. Specifically, it was hypothesized that as nurses cultivate higher levels of mindfulness, the impact of Role-Overload on occupational stress would be mitigated, thereby fostering healthier work environments and improved performance outcomes.

Objective

- To examine, the relationship between Role-Overload, occupational stress, job performance and Mindfulness.
- To find out demographic differences among study variables.

Hypotheses

1) Role-Overload is positively associated with occupational stress.
2) There is a significant correlation between Role-Overload and the three subscales of job performance, more specifically:
    a) Role-Overload is negatively associated with Task performance.
    b) Role-Overload is negatively associated with Contextual performance.
    c) Role-Overload is positively associated with counterproductive work behavior.
3) There is a significant correlation between Occupational stress and the three sub scales of job performance, more specifically:
    a) Occupational stress is negatively associated with Task performance.
    b) Occupational stress is negatively associated with Contextual performance.
    c) Occupational stress is positively associated with Counterproductive work behavior.
4) Occupational stress mediates the relationship between Role-Overload and job performance, more specifically:
    a) Increase in occupational stress also increases the negative impact of Role-Overload on Task performance.
    b) Increase in occupational stress also increases the negative impact of Role-Overload on Contextual performance.

c) Increase in occupational stress also increases the positive impact of Role-Overload on Counterproductive work behavior.

5) Mindfulness moderates the mediated relationship, mentioned above, by buffering the effect of occupational stress.
6) Mindfulness moderates between Role Overload and Job Performance.
7) Mindfulness moderates between Occupational stress and Job Performance.
8) Some demographic variations are present among the responses.
   a) Married individuals experience significantly different levels of Role-Overload, job stress and mindfulness as compared to unmarried individuals.
   b) Individuals from nuclear and joint family members experience different levels of Role-Overload, job stress and mindfulness.

Method

Research Design

To ascertaining the effects that Role-Overload, mindfulness, and occupational stress play on the job performance of nurses. The current study utilized a quantitative, correlational research design, as this design not only has higher generalizability but is also more time efficient, which is practical considering the sample of working nurses.

The research employed two phases, in phase one, a pilot was conducted, prior to the full-scale data collection for main study, to confirm the reliability of scales used and makes any changes based on insight provided by pilot study.

After pilot study, phase two consisting of the main study was conducted; assessing the proposed hypothesis through correlations, t-test, mediation and moderated mediation analysis.

The Independent variables were Role-Overload, job stress and Mindfulness while the dependent variable was Job Performance. Likert scale questionnaires with multiple options were used to collect the data necessary to conduct data analysis and all the questions were self-report due to the higher response rate from self-report questions.

Data Analysis

SPSS Ver 21 was used to analyze data collected from questionnaires Within the pilot study, descriptives of the sample were observed with mean and standard deviation and Cronbach's alpha reliability for scales were conducted for the continued use of scale in main study. Additionally, the pilot study also included the regression analysis along with Pearson correlations to confirm the linear relationships between study variables to confirm the linear relationships in accordance with study hypothesis for conducting further research.

Main study included the Demographic statistics for the sample. Pearson correlation was run to assess relationships between study variables, as it was necessary to understand the direction and strength of relationships before further analysis. Latest version 4.0 of Andrew Hayes' Process macro model 4 and model 7 were used to assess mediation and moderated mediation for the study variables (Hayes., 2013). To assess the differences in responses for some demographics, t-test was also used.

Sampling and Participants

Participants for the pilot study were collected through convenience sampling as such nurses present in public hospitals at the time of data collection were approached, sample size was limited to fifty to conserve time and resources while confirming the reliability of the scale within the selected population.

Non-probability sampling Purposive convenience sampling was used to select the sample for main data collection, as it would prove difficult to collect data from the limited number of nurses present in the accessible area for the author, within time constrains. The sample size was generated through an online sample size calculator. According to a report by Pakistan Economic Survey 2021-22 on Health and Nutrition, there are an estimated 121,245 registered nurses functioning in Pakistan (Pakistan Bureau of Statistics 2021), keeping the confidence level at 95% and Margin of Error at 5%, the sample size was calculated to be at 384, while minimum was set to 250 as per guidelines of Schönbrodt and Perugini (2013).

Inclusion/ Exclusion Criteria:

The sample for this research included only those nurses present during data collection and having more than 6 months experience. Those nurses who did not fall within this riteria were not included in the study.

Instruments

Information/Consent form

An Information/Consent form was created to inform the individuals of their rights and to get their permission. The information in the consent form also provides the participants an overview of the research.

Demographic Sheet

A demographic sheet was created to collect the demographic data of the sample, i.e. the Age, Experience, Sex, Family Structure etc.

Role-Overload

The revised version of Reilly's Role-Overload Scale was used to measure Role-Overload. The revised version of the scale contains 6 items measured on a 5-point Likert scale (1 = strongly disagree, 5 = Strongly agree). The 6-item revised version of the Reilly Role-Overload Scale has been found to have high internal consistency, with Cronbach's alpha coefficients ranging from 0.87 to 0.92, indicating good reliability, furthermore the scale has been employed in various studies and demonstrated acceptable validity as it correlated with Role-Overload external criterion variables in predictable fashion (Thiagarajan et al., 2006; Reilly, 1982).

Occupational stress

Occupational stress was measured by “Job Stress Scale” (Crank et al., 1995), it is a measure of job stress that emphasizes the direct experience of stress among employees in their work life. It consists of 5 items that have a 5-point Likert-type response format (1 = strongly agree to 5 = strongly disagree). It is a one factor measure of job stress. It has been known to be a reliable scale with good model fit $\alpha = 0.82$. Furthermore, it’s correlation with related variables shows that it is a valid measure of job stress (Lambert et al., 2006; Lambert et al., 2016).

Mindfulness

Mindful Attention Awareness Scale MAAS was used to measure dispositional mindfulness (Brown & Ryan, 2003). The 15-items measure mindfulness on a 6-point Likert scale (1 = Almost Always to 6 = Almost Never). It is a stable scale reliable and valid with an internal consistency of Cronbach alpha ranging between .0.76 and 0.93 according to various studies (Osman et al., 2016; MacKillop & Anderson, 2007; Black et al., 2012).

Job Performance

Individual Work Performance Questionnaire version 1.0 was used to measure job performance of individuals. The IWPQ consists of three sub-scales (task performance, contextual performance, and counterproductive work behavior) It consists of 18-item scales developed in The Netherlands. (Koopmans, 2014). These generic short scales show good fit to the Rasch model and satisfy key measurement requirements. The person separation index (PSI) is similar to Cronbach's alpha, the PSI of the scales are 0.81, 0.85 and 0.74 respectively. The job performance scale has been used in various studies and shows good validity (Jakada et al., 2020; van der Vaart, 2021)

Operational definitions

Role-Overload

Within this study Role-Overload was defined as a situation in which individuals feel that life demands are more than they can handle with the available resources to complete them (Eatough et al., 2011). Higher scores on Reily Role-Overload scale indicated higher levels of Role-Overload (Thiagarajan et al., 2006; Reilly, 1982).

Occupational stress

Within this study Occupational stress was defined as the scores of nurses on the "Parker`s Job Stress Scale", where higher score denote higher job stress. Occupational stress refers to Work-related stress; it is the experienced stress in a job when employees are confronted with work demands and placed under pressure while not being adequately equipped with the ability and required knowledge to successfully cope (Quick & Henderson, 2016; Sauter et al., 1992; Hurrell & Murphy, 1996).

Job performance

Within the context of this study, Job performance has been assessed through three factors. The three factors or dimensions are task performance, contextual performance, and counterproductive work behavior. Task performance refers to "the proficiency with which individuals perform the core substantive or technical tasks central to his or her job", with higher scores indicating higher task performance (Campbell, 1990). Contextual performance refers to the "behaviors that support the organizational, social and psychological environment in which the technical core must function", similar to task performance scoring higher on the questionnaire indicates higher contextual performance (Borman & Motowidlo, 1993). Thirdly, counterproductive work behavior, refers to the "behavior that harms the well-being of the organization" (Rotundo & Sackett, 2002), scoring higher on the associated scale would indicate higher frequency of counterproductive behaviors in the subject.

Mindfulness

Mindfulness is the practice of purposely bringing one's attention in the present moment without evaluation, to be focused on present moments and able to perform tasks with more

attention, scoring higher on the MAAS implies higher mindfulness among the scorer (Kabat-Zinn, 2003; Bishop et al., 2004).

Procedure:

A pilot study was first conducted to confirm the reliability of the scales used in research and to ascertain the relationship between Role-Overload, Occupational Stress, Mindfulness and Job Performance and observe the demographic differences among the study variables. Sample from Rawalpindi/Islamabad hospitals was limited to fifty nurses for the pilot due to time and resource constraints. After confirmation of the scale's reliability, some demographics were excluded from main data collection because they required extra time while providing limited use.

Main data was collected from nurses working in Pakistan, Punjab hospitals. The head of the nursing department of each hospital was contacted and asked for permission to approach the nurses for participation after providing the appropriate letter and application. Nurses fitting the inclusion criteria, with a minimum six months of on job experience, were approached for their consent in participation within study. Those willing to participate were provided with a consent form detailing their rights and a brief explanation of the study along with the full questionnaires to be duly filled. In addition to the four questionnaires of the study variables, participants were also asked to answer basic demographic questions. All questions were self-reported. In addition to physical questionnaires, an online form was also generated through google forms and circulated through nurses WhatsApp groups as well as individually. The respondents were assured of their anonymity and their right to retract their responses at any point during the conduction of the study was assured. It was also ensured that data collection was carried out in an ethical manner.

Ethical Concerns:

The study ensured thorough ethical considerations throughout the data collection process. Permission was obtained from all participating organizations, and nurses willingly participated after being informed of their rights. They were informed that they could withdraw at any time without repercussions. To accommodate their busy schedules, nurses were given ample time during breaks and less busy periods to complete the questionnaire. Additionally, they were allowed to take the questionnaire to finish the next day, and extra questionnaires were provided at nurse's stations for those wishing to participate at any time. An online questionnaire was also circulated in nurses' WhatsApp groups for added convenience. To safeguard anonymity, personal contact information i.e. emails, phone numbers were not collected, any other personal information was optional, and nurses were ensured their data would not be shared with unrelated third parties, nor would it be linked back to them individually. And they were assured that the data collected would be used responsibly and the findings would be used for the betterment of the healthcare system. The questionnaires utilized a simple Likert scale, and nurses were assured that they could leave any question unanswered if it made them uncomfortable, although they were encouraged to answer all. The information of the researcher was provided with the questionnaires for any questions or concerns the participants may have.

Chapter 3: Pilot Study

Results

Table 1

Mean, Standard Deviation, Frequency and Percentage of Demographic information (n=50)

Demographic Variables		M	SD	*f*	%
Age (in Years)		33	8.61	50	---
Income		65851	38480.5	27	---
Experience		11	8.4	47	---
Hours per week		42	9.8	46	---
Gender	Male	---	---	5	10
	Female	---	---	45	90
Family Structure	Joint	---	---	24	48
	Nuclear	---	---	23	46
Hospital type	Public	---	---	28	56
	Private	---	---	8	16
	Army	---	---	11	22
Marital Status	Married	---	---	35	70
	Unmarried	---	---	15	30
Education	Diploma/Fsc	---	---	10	20
	B.Sc.	---	---	21	42
	MSN/MPH	---	---	8	16
	Above Masters	---	---	6	12

This pilot study analyzed the Role-Overload, job performance, occupational stress, and Mindfulness of 50 nurses. As seen in Table 1, The mean age of nurses participating in the study

was 33; only 5 of the nurses were male while the remaining 45 were female, the average salary was 65851. The Average nurse in this study worked a mean of 42 hours per week, earned a mean of 65,851 Rs per month and had an experience of 11 years. Among the nurses from various hospitals 28 were from a Public/Government hospital, 8 were working at a private hospital and 11 were from an Army hospital. 24 were from joint household as opposed to 23 from nuclear, 35 were married and 15 Unmarried. 10 of the nurses had a diploma, 21 with B.Sc. degree, 8 with a Masters, and 6 above masters.

Table 2

Cronbach alpha reliability coefficients of the scales (N = 50)

Study variables	*M*	*SD*	Cronbach' α	Skewness	Kurtosis	Actual range	Potential range
RO	19.94	5.6	.88	-.13	-.64	8-30	6-30
OS	13.82	4.90	.88	.36	-.41	5-24	5-25
Job Performance							
T P	17.74	4.41	.86	-.68	1.20	5-29	5-25
C P	25.54	8.02	.89	.68	.88	10-48	8-40
C W B	14.16	4.93	.75	-.06	-.64	5-24	5-25
Mindfulness	56.38	14.6	.89	.34	-.08	26-89	15-90

Note. RO = Role-Overload, CWB= Counterproductive Work Behavior, CP= Contextual Performance, TP= Task Performance, OS = Occupational Stress

Cronbach's alphas for the 6-item Role-Overload and 5 item job stress scale were found to be reliable at .83 and .88 respectively. The 18 item Job performance scale showed high reliability in its three sub scales; The Task Performance subscale showed high reliability (5 items; α = .86), The Contextual Performance subscale consisting of 8 items and had a reliability of .89 while the 5 item Counterproductive Work Behavior, had a reliability of .75. Mindful Attention Awareness Scale MAAS was also found to be highly reliable (15 items; α = .89).

Table 3

Correlations between Role-Overload, Occupational Stress and Mindfulness (N = 50)

No.	Study variables	I	II	III	IV	V	VI
I	TP (JP 1)	---	.64**	-.46**	-.31*	-.42**	.35*
II	CP (JP 2)	---	---	-.45**	-.37**	-.44**	.46**
III	CWB (JP 3)	---	---	---	-.17	.35*	-.34*
IV	RO	---	---	---	---	.39**	-.13
V	OS	---	---	---	---	---	-.45**
VI	MAAS	---	---	---	---	---	---

Note. *p<.05, **p<.01

RO = Role-Overload, OS = Occupational Stress, MAAS = Mindful Attention Awareness Scale, TP = Task Performance, CP = Contextual Performance, CWB = Counterproductive Work Behavior, JP = Job Performance

According to Pearson correlation (Table 3), the subscales of job performance showed expected significant correlations, as task performance is positively correlated with contextual performance $p < .01$ while counterproductive work behavior has a negative relationship with task $p < .01$ and contextual performance $p < .01$. The scores on Role-Overload scales were negatively correlated with task and contextual performance $p<.05$ and $p<.01$ respectively. With increased Occupational stress, Task and Contextual performance appeared to decrease while counterproductive work behavior showed an increase; $p<.01$, $p < .01$ and $p < .05$ respectively.

Increase in Mindfulness was co-occurring with increases in Task and Contextual performance and decreases in counterproductive work behavior and Occupational stress; $p<.05$, $p < .01$, $p < .01$ and $p < .05$ respectively.

Table 4

Regression results for Role-Overload and Occupational Stress predicting Task Performance (N = 50)

Variables	B	β	S. E	t	p
RO	-.14	-.18	.11	-1.25	.22
OS	-.31	-.35	.13	-2.42	.02

RO = Role-Overload, OS = Occupational stress

The overall regression was statistically significant R2 = .20, F (2, 46) = 5.74, p < .01. It was found that Role-Overload did not significantly predict Task Performance p> .05 however Occupational Stress did significantly predict Task Performance p < .05.

Table 5

Regression results for Role-Overload and Occupational Stress predicting Contextual Performance (N = 50)

Variables	B	β	S. E	t	p
RO	-.33	-.24	.19	-1.71	.09
OS	-.57	-.35	.22	-2.54	.02

RO = Role-Overload, OS = Occupational stress

The overall regression was statistically significant R2 = .25, F (2, 46) = 7.50, p < .001 It was found that Role-Overload did not significantly predict Contextual Performance p> .05, however Occupational Stress significantly predicted Contextual Performance p < .05.

Table 6

Regression results for Role-Overload and Occupational Stress predicting Counterproductive Work Behavior (N = 50)

Variables	B	β	S. E	t	p
RO	.04	.04	.13	.28	.78
OS	.33	.34	.14	2.26	.03

RO = Role-Overload, OS = Occupational stress

The overall regression was statistically significant R2 = .13, F (2, 46) = 3.35, $p < .05$ It was found that Role-Overload did not significantly predict Counterproductive Work Behavior $p > .05$, while Occupational Stress significantly predicted Counterproductive Work Behaviour $p < .05$.

Discussion

The present pilot study examined the characteristics of 50 nurses, focusing on Role-Overload, job performance, occupational stress, and mindfulness. According to Table 1, the nurses' average age was 33 years; majority of whom were female. On average, nurses worked 42 hours per week, earned 65,851 Rs per month, and had 11 years of experience. The educational levels of most nurses were 14 years. The study also found differences in marital status and hospital settings among the nurses. The scales used, Table 2, demonstrated reliable statistics for Role-Overload, Occupational Stress, Job Performance and Mindfulness and the alpha values were found to be well above 0.5 for all the scales and subscales.

The correlation analyses, Table 3, revealed that Role-Overload was correlated with Occupational Stress measure, the results implied that those with higher Role-Overload were more likely to experience Occupational stress as is supported by literature (Dodanwala et al., 2022; Karimi et al., 2014). Occupational Stress showed significant correlations with mindfulness scores, indicating that those with higher levels of mindfulness would be less likely to experience job stress, studies among nurses have found similar results supporting the importance of mindfulness in stress reduction (Ghawadra et al., 2019). As well as the importance of mindful based strategies in buffering the negative effects of job stress (Li et al., 2021; Liang & Zhang 2021).

Correlations was insignificant for Role-Overload and mindfulness however this may be due to the fact that both high and low mindfulness individuals can experience high Role-Overload (Warrier et al., 2022), while the insignificant correlation between Role-Overload and Counter productive work behavior may be attributed to the fact that Role-Overload within this sample does not necessarily function as a detrimental stressor enough to be correlated with an

increase in CWB, this can be due to small sample that wasn't diverse enough to represent the variable accurately an unaccounted various positive external factors, including institutional support and resources (Abas et al., 2015; Huang et al., 2021).

Table 3 correlations for task and contextual performance, Role-Overload and job stress negatively affected the scores while mindfulness positively affected them as is supported by previous studies (Uraon & Gupta, 2021; Dane, 2011). Findings for counterproductive work behavior correlations, increased job stress and decreased mindfulness correlated with increased CWB among nurses. Which is also supported by literature that those with better working condition in less stress and with better mental state due to mindfulness are less likely to engage in counterproductive work behavior (Long, 2017; Zhang et al., 2019; Suroso et al., 2020)

The regression analyses in Table 4, 5 and 6 explored mindfulness, Role-Overload and Job Stress predicted Task Performance, Contextual Performance, and Counterproductive Work Behavior. The results showed that Job Stress significantly predicted Task Performance and Contextual Performance, while Role-Overload did not have a significant effect on these outcomes. Neither Role-Overload nor Job Stress significantly predicted Counterproductive Work Behavior. The regression findings demonstrate that job stress and Role-Overload do not function as a similar strain variable (Huang et al., 2021), i.e. predicting lower performance, instead these findings indicate that Role-Overload may function as a stressor that may or may not cause a decrease in performance, there Is some research into the area of hindrance and challenge stress that shows that challenge stressors in fact offset the negative effects of hindrance stressors and may be beneficial for performance (LePine et al., 2005; Ma et al., 2021). Similarly, studies in Pakistan have also shown that stressors are often observed to act as hindrance in the presence of job stress, on performance (Naru & Rehman, 2020).

One possible reason for the lack of significant relationship of Role-Overload and job stress with CWB may be influenced by social desirability bias of the nurses (Bispo Júnior, 2022), the sample for the pilot study was small as such it may not have included a sufficiently diverse sample to portray a delicate variable such as CWB.

In conclusion, this pilot study provided valuable insights into the relationships between Role-Overload, Job Stress, job performance, and mindfulness in nurses. All the scales were verified to be reliable in the study population, furthermore within the pilot study; Job Stress emerged as an influential factor in predicting job performance outcomes, while Role-Overload appeared to have less of an impact. These findings highlight the importance of addressing Job Stress to improve nurses' overall job performance and well-being. However, a more detailed understanding of the research topic will be grasped by conducting complete research in the meantime the pilot study gives promising results for the main objectives of the research in these preliminary findings.

Chapter 4: Main Study

Results

Table 7

Mean, Standard Deviation, Frequency and Percentage of Demographic information (n=310)

Variables		M	SD	*f*	%
Age (in Years)		32	8.90	310	---
Experience		10.40	8.36	308	---
Hours per week		38.67	11.14	304	---
Gender:	Male	---	---	37	11.9
	Female	---	---	231	74.5
Family Structure:	Joint	---	---	103	33.2
	Nuclear	---	---	155	50.0
Marital Status:	Married	---	---	193	62.3
	Unmarried	---	---	115	37.1

The study collected data in the form of questionnaires from 310 nurses. The participants' ages ranged from 19 to 57 years, with a mean age of 32 years. The average nurse worked 38.7 hours per week. Out of the 310 participants, 37 (11.9%) identified as male, while 231 (74.5%) identified as female. Most of the participants reported being from a nuclear family structure (n = 155, 50.0%), while 103 (33.2%) reported being from a joint family structure, the rest were unaccounted for. Among the participants, 215 (69.4%) were affiliated with Government (Public) hospitals, 26 (8.4%) with Private hospitals, and 22 (7.1%) were associated with army hospitals. The participants' marital status revealed that 193 (62.3%) were married, while 115 (37.1%) were unmarried.

Table 8

Reliability and Normality statistics of study Variables. (N = 310)

Scale	Items	Alpha	M	SD	Skewness	Kurtosis	Actual range
RO	6	.87	20.98	5.55	-0.42	-0.48	7-30
OS	5	.85	14.64	4.89	0.02	-0.68	5-25
MAAS	15	.79	60	10.89	-0.03	-0.25	36-89
Job Performance							
TP	5	.80	17.55	4.20	-0.47	-0.03	6-25
CP	8	.85	27.22	6.84	-0.20	-0.7	10-40
CWB	5	.65	13.07	4.11	0.11	-0.41	5-23

RO= Role-Overload, OS= Occupational stress, CWB= Counterproductive Work Behavior, CP= Contextual Performance, TP= Task Performance, MAAS= Mindfulness Attention Awareness Scale

The Role-Overload scale demonstrates good internal consistency with a Cronbach's alpha coefficient of .82. Participants reported an average score of 17.67 (SD = 4.62) on this scale. The Job Stress scale, comprising 5 items, exhibited high internal consistency with a Cronbach's alpha coefficient of .85. Participants' average score on this scale was 14.64 (SD = 4.89). The Mindful Attention Awareness Scale, a 15-item scale, demonstrated good reliability with a Cronbach's alpha of .79. Participants obtained an average score of 60 (SD = 10.89) on this scale.

The Job Performance construct includes Three Sub scales: Task Performance, Contextual Performance and Counterproductive Work Behavior. The 5-item Task Performance sub-scale

showed good internal consistency with a Cronbach's alpha of .8. Participants' average score on this scale was 17.55 (SD = 4.20). The 8-item Contextual Performance subscale also exhibited high internal consistency with a Cronbach's alpha of .85. Participants obtained an average score of 27.22 (SD = 6.84) on this scale. The Counterproductive Work Behavior subscale, comprising 5 items, also showed acceptable internal consistency with a Cronbach's alpha of .65. Participants' average score on this scale was 13.07 (SD = 4.11).

The skewness and kurtosis values suggest that most of the variables have approximately normal distributions, as according to the sample size the distribution was considered normal i.e. for samples of 300 and greater the values of kurtosis (-7 to 7); and skewness (-2 to 2) are considered normal. Overall, the scales used in the study demonstrated acceptable reliability, allowing for valid measurement of the constructs of interest.

Table 9

Item Total correlation for the scales and sub-scales used (N = 310)

	Mindfulness		RO		OS		Task Perf.		Contextual		CPW	
	ITC	C.ITC	ITC	C.ITC	ITC	CITC	ITC	CITC	ITC	CITC	ITC	CITC
1	.61**	.52	.80**	.71	.82**	.70	.67**	.73	.81**	.72	.66**	.43
2	.55**	.46	.81**	.72	.85**	.76	.86**	.47	.83**	.76	.62**	.40
3	.55**	.44	.82**	.73	.86**	.77	.57**	.75	.47**	.32	.59**	.34
4	.54**	.43	.70**	.55	.69**	.52	.79**	.36	.55**	.41	.65**	.39
5	.47**	.34	.67**	.53	.76**	.60	.84**	.66	.58**	.46	.70**	.44
6	.44**	.32	.95**	.97					.80**	.72		
7	.62**	.54							.81**	.72		
8	.43**	.33							.68**	.55		
9	.43**	.33										
10	.46**	.36										
11	.49**	.37										
12	.67**	.59										
13	.47**	.33										
14	.52**	.42										
15	.38**	.25										

Note: ITC = Item total correlation, CITC = Corrected item total correlation, RO = Role-Overload, CWB= Counter Productive Work behavior, OS =Occupational stress

Results of Item total correlation and Corrected item total correlation showed that all the scales used demonstrated high internal validity as; for all items correlation coefficients were > .20 (Itineris, 2024) and appeared significant, $p < .001$, for all items in the three unidimensional scales (Mindfulness, Role-Overload and job stress) and three sub scales of job performance. Furthermore, corrected item total correlations further confirmed the findings of the Pearson's product-moment correlation.

Table 10

Correlation between study variables and demographic data (N = 310)

	Variables	1	2	3	4	5	6	7
1.	Age	---	-.05	.09	-.04	.23**	.19**	.05
2.	CWB	---	---	.23**	.21**	-.18**	-.31**	-.23**
3.	RO	---	---	---	.23**	.14*	-.18**	-.14**
4.	OS	---	---	---	---	-.33**	-.49**	-.38**
5.	MAAS	---	---	---	---	---	.33**	.20**
6.	TP	---	---	---	---	---	---	.29**
7.	CP	---	---	---	---	---	---	---

RO= Role-Overload, OS= Occupational stress, CWB= Counterproductive Work Behavior, CP= Contextual Performance, TP= Task Performance, MAAS= Mindfulness Attention Awareness Scale

As age increased, there was a corresponding rise in mindfulness, and task performance $r(308) = 23$, $p < .001$and $r(308) = .19$, $p < .001$. Those displaying higher instances of Counterproductive Work Behavior demonstrated elevated levels of Role-Overload and Job Stress $r\ (308) = .23$, $p < .001$ and $r\ (308) = .21$, $p < .001$. While having lower mindfulness, task, and contextual performance $r\ (308) = -.18$, $p < .001$, $r\ (308) = -.31$, $p < .001$ and $r\ (308) = -.23$, $p < .001$. Increased Role-Overload coincided with heightened occupational stress and poorer task and contextual performance $r\ (308) = .23$, $p < .001$, $r\ (308) = -.18$, $p < .001$ and $r\ (308) = -.15$, $p = .01$; however, there was an increase in mindfulness $r\ (308) = .14$, $p = .02$. A rise in Occupational Stress was linked to decreased mindfulness as well as reduced task and Contextual performance r (308)

= .33, $p < .001$, $r(308) = -.49$, $p < .001$ and $r(308) = -.38$, $p < .001$. A higher level of mindfulness related to improved task and contextual performance $r(308) = .33$, $p < .001$ and $r(308) = .20$, $p = .001$. Moreover, the positive dimensions of job performance, namely task performance and contextual performance, exhibited a strong positive correlation $r(308) = .29$, $p < .001$.

Table 11

Mediation of Occupational Stress from Role-Overload to Task Performance (N = 310)

Path	Coefficient (b)	SE	t-value	p-value	95% CI
a (RO -> OS)	.20	.05	4.16	.00	[.11, .30]
b (OS -> TP)	-.40	.04	-9.45	.00	[-.48, -.32]
c' (RO -> TP)	-.06	.04	-1.47	.14	[-.13, .01]
c (Total Effect)	-.14	.05	-3.64	< .001	—
Indirect Effect	-.08	—	—	—	[-.12, -.05]

Model for the a-path R^2 =.05, F (1, 308) =17.29, p < .001, Model for b and c'-path R^2 =.24, F (2, 307) =49.31, p < .001, Model for c-path R^2 =.03, F (1, 308) =10.71, p < .001

Mediation analysis found a significant a-path from Role-Overload to Occupational Stress $p < .001$, and a significant interaction between Occupational Stress and Task Performance for the b-path $p < .001$ however a direct effect c' from Role-Overload to Task Performance was not significant $p > .05$.

There was a significant indirect effect of Role-Overload on Task Performance through Occupational Stress, indicating full mediation. The bias-corrected 95% CI for path a and path b excluded zero, confirming Occupational Stress as a mediator for the effect of Role-Overload on Task Performance.

Table 12

Mediation of Occupational Stress from Role-Overload to Contextual Performance (N = 310)

Path	Coefficient (b)	SE (HC4)	t-value	p-value	95% CI
a (RO -> OS)	.20	.05	4.16	.00	[.11, .29]
b (OS -> CP)	-.51	.08	-6.72	.00	[-.65, -.37]
c' (RO -> CP)	-.08	.07	-1.13	.26	[-.22, .07]
c (Total Effect)	-.18	.07	-2.57	.01	—
Indirect Effect	-.10	—	—	—	[-.16, -.06]

Note. Model for the a-path R^2 =.05, F (1, 308) =17.29, $p < .001$, Model for b and c'-path R^2 =.15, F (2, 307) =26.34, $p < .001$, Model for c-path R^2 =.02, F (1, 308) =6.63, $p < .05$

Mediation analysis found a significant a-path from Role-Overload to Occupational Stress $p < .001$ and a significant interaction between Occupational Stress and Contextual Performance for the b-path $p < .001$. However, the direct effect c' from Role-Overload to Contextual Performance was not significant, $p > .05$.

There was a significant indirect effect of Role-Overload on Contextual Performance through Occupational Stress indicating full mediation and the bias-corrected 95% CI for path a and b excluded zero, confirming Occupational Stress as a mediator for the effect of Role-Overload on Contextual Performance.

Table 13

Mediation of Occupational Stress from Role-Overload to Counterproductive work Behavior (N = 310)

Path	Coefficient (b)	SE (HC4)	t-value	p-value	95% CI
a (RO -> OS)	.20	.05	4.16	.00	[.11, .29]
b (OS -> CWB)	.14	.05	2.98	.00	[.05, .23]
c' (RO -> CWB)	.14	.04	3.37	.00	[.05, .23]
c (Total Effect)	.17	.04	4.23	.00	—
Indirect Effect	.03	—	—	—	[.01, .05]

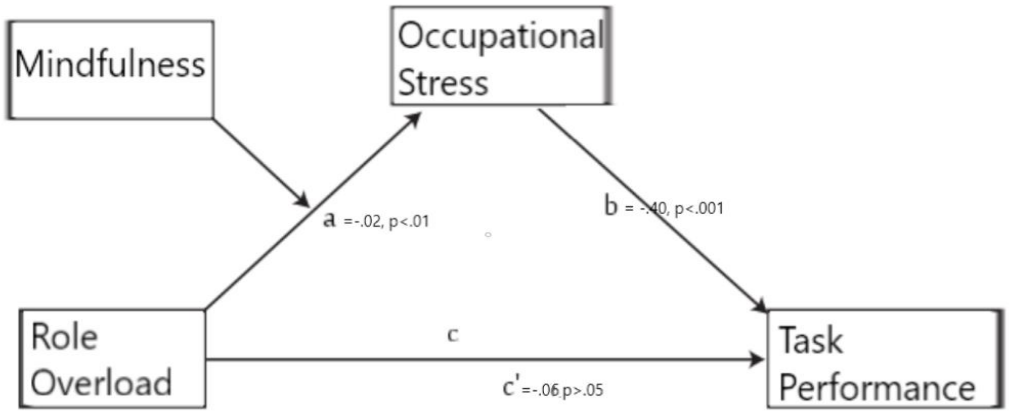
Note. Model for the a-path R^2 =.05, F (1, 308) =17.29, $p < .001$, Model for b and c'-path R^2 =.08, F (2, 307) =13.62, $p < .001$, Model for c-path R^2 =.05, F (1, 308) =17.87, $p < .001$

Mediation analysis found a significant a-path from Role-Overload to Occupational Stress $p < .001$, and a significant interaction between Occupational Stress and Counterproductive work Behavior for the b-path $p < .01$. The direct effect c' from Role-Overload to Counterproductive work Behavior was also significant $p < .001$.

There was a significant indirect effect of Role-Overload on Counterproductive work Behavior through Occupational Stress indicating partial mediation. The bias-corrected 95% CI for path a and b excluded zero, confirming Occupational Stress as a mediator for the effect of Role-Overload on Counterproductive work Behavior.

Figure 2

Moderating role of Mindfulness on the Mediation of Occupational Stress between Role-Overload and Task Performance



The index of moderated mediation was significant, b = .01, 95% percentile CI [.00, .01], providing evidence for a moderated mediation. The conditional indirect effect for high values (10.89) of Mindfulness was non-significant, b = -.03, 95% percentile CI [-.08, 03], but it was significant for medium values (0), b = -.10, CI [-.14, -.06] as well as for small values (-10.89) of Mindfulness, b = -.21, CI [-.23, -.12].

For the a-path from Role-Overload to Occupational Stress there was a significant interaction between Role-Overload and Mindfulness, $p < .001$, $\Delta R^2 = .04$. The conditional effect from Role-Overload on Occupational Stress was significant for small (-10.89), b = .43, {.30, .55}, and medium values (0) of Mindfulness, b = .25, {.16, .34}, but non-significant for larger values (10.89) of Mindfulness, b = .10, {-.07, .21}.

The b-path from Occupational stress to Task Performance was also significant while the direct (c' path) effect from Role-Overload to Task Performance was not significant $p > .05$. Bootstrap 95% CI for path a {-.03, -.01] and b [-.49, -.32] excluded zero confirming the significance of the relationships.

Table 14

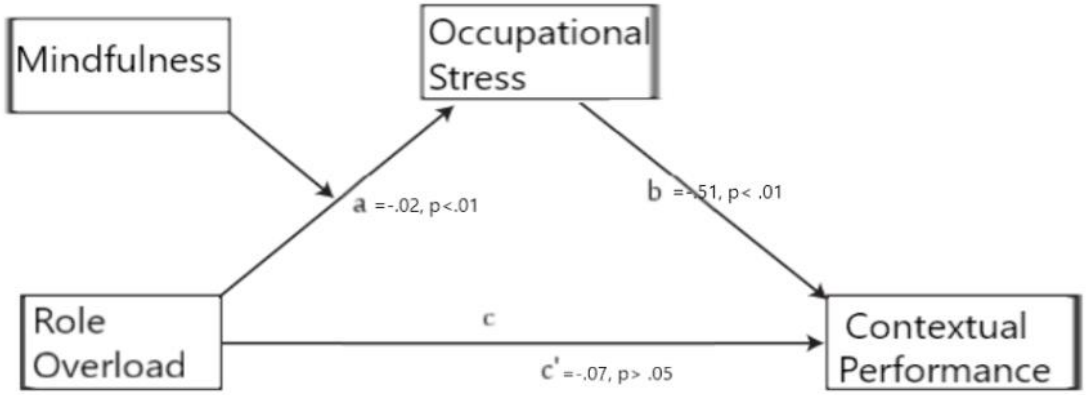
Regression results for the mindfulness moderation on a-path from Role-Overload to Occupational Stress and the b-path from Occupational Stress to Task Performance (N = 310)

IV	Model a-path			Model b/c'-path		
	b	SE	p	b	SE	p
Role-Overload	.25	.05	.00	-.06	.04	.12
Mindfulness	-.17	.02	.00			
Role-Overload x Mindfulness	-.02	.00	.00			
Occupational Stress				-.40	.04	.00

Model for the a-path $R^2 = .23$, $F (3, 306) = 32.25$, $p < .001$, Model for b and c'-path $R^2 = .24$, $F (2, 307) = 50.15$, $p < .001$.

Figure 3

Moderating role of Mindfulness on the Mediation of Occupational Stress between Role-Overload and Contextual Performance



The index of moderated mediation was significant, b = .01, 95% percentile CI [.00, .01], providing evidence for a moderated mediation. The conditional indirect effect for high values (10.89) of Mindfulness was non-significant, b = -.04, 95% percentile CI [-.09, .03], but it was significant for medium values (0) of Mindfulness, b = -.13, CI [-.18, -.08] as well as for small values (-10.89) of Mindfulness, b = -.22, CI [-.31, -.14].

For the a-path from Role-Overload to Occupational Stress there was a significant interaction between Role-Overload and Mindfulness, $p < .001$, $\Delta R^2 = .04$. The conditional effect from Role-Overload on Occupational Stress was significant for small (-10.89), b = .43, {.30, .55}, and medium values (0) of Mindfulness, b = .25, {.16, .34}, but non-significant for larger values (10.89) of Mindfulness, b = .07, {-.07, .21}.

The b-path from Occupational stress to Contextual Performance was also significant while the direct (c' path) effect from Role-Overload to Contextual Performance was not significant p > .05. Bootstrap 95% CI for path a {-.03, -.01] and b[-.65, -.36} excluded zero confirming the significance of the relationships.

Table 15

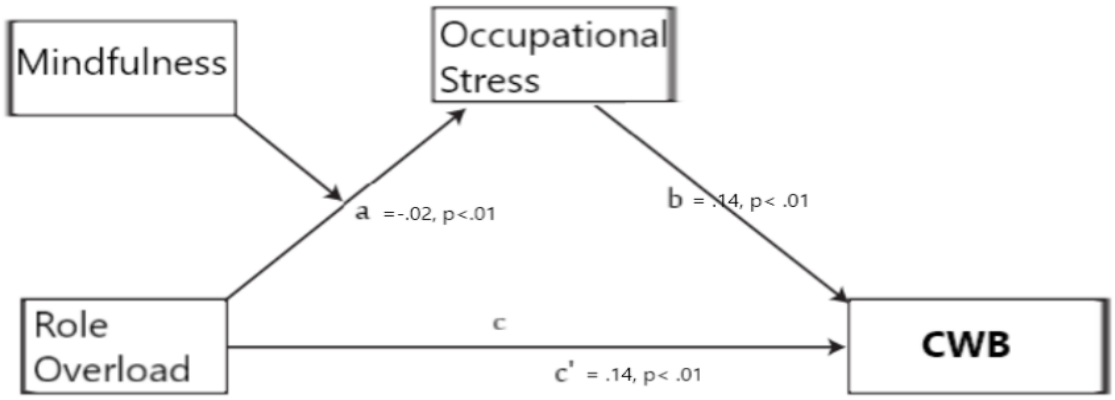
Regression results for the mindfulness moderation on a-path from Role-Overload to Occupational Stress and the b-path from Occupational Stress to Contextual Performance (N = 310)

IV	Model a-path			Model b/c'-path		
	b	SE	p	b	SE	p
Role-Overload (IV)	.25	.05	.00	-.07	.07	.29
Mindfulness (MOD)	-.17	.02	.00			
Role-Overload x Mindfulness	-.02	.00	.00			
Occupational Stress (MED)				-.51	.07	.00

Model for the a-path $R^2 = .23$, $F(3, 306) = 32.25$, $p < .001$, Model for b and c'-path $R^2 = .15$, $F(2, 307) = 26.11$, $p < .001$.

Figure 4

Moderating role of Mindfulness on the Mediation of Occupational Stress between Role-Overload and Counterproductive Work Behavior



The index of moderated mediation was significant, b = -.00, 95% percentile CI [-.00, -.00], meaning there was moderated mediation. The conditional indirect effect for high values (10.89) of Mindfulness was non-significant, b = .01, 95% percentile CI [-.01, .03], but it was significant for medium values (0) of Mindfulness, b = .04, CI [.01, .06] as well as for small values (-10.89) of Mindfulness, b = .06, CI [.02, .10].

For the a-path from Role-Overload to Occupational Stress there was a significant interaction between Role-Overload and Mindfulness, $p < .001$, $\Delta R^2 = .04$. The conditional effect from Role-Overload on Occupational Stress was significant for small (-10.89), b = .43, {.30, .55}, and medium values (0) of Mindfulness, b = .25, {.16, .34}, but non-significant for larger values (10.89) of Mindfulness, b = .07, {-.07, .21}.

The b-path from Occupational stress to Counterproductive Work Behavior and the direct (c' path) effect from Role-Overload to Counterproductive Work Behavior were significant $p < .001$. Bootstrap 95% CI for path a {-.02, -.01], b[.04, .24} and c' {.06, 23} excluded zero confirming the significance of the relationships.

Table 16

Regression results for the mindfulness moderation of a-path from Role-Overload to Occupational Stress and the b-path from Occupational Stress to Counterproductive Work Behavior. (N = 310)

IV	Model a-path			Model b/c'-path		
	b	SE	p	b	SE	p
Role-Overload (IV)	.25	.05	.00	.14	.04	.00
Mindfulness (MOD)	-.17	.02	.00			
Role-Overload x Mindfulness	-.02	.00	.00			
Occupational Stress (MED)				.14	.05	.00

Note. Model for the a-path $R^2 = .23$, $F(3, 306) = 32.25$, $p < .001$, Model for b and c'-path $R^2 = .08$, $F(2, 307) = 10.70$, $p < .001$.

Table 17

Mindfulness moderates Between Role Overload and Task Performance, and between Occupational stress and Task performance (N = 310)

IV	Model c'-path			Model b -path		
	b	SE	p	b	SE	p
RO (c'), OS(b)	-.18	.04	.00	-.35	.04	.00
Mindfulness	.14	.02	.00	.08	.02	.00
ROxM, OSxM	.01	.00	.00	.00	.00	.12

Model for the c'*-path* $R^2 = .19, F(3, 306) = 23.33, p < .001$, *Model for the* b*-path* $R^2 = .28, F(3, 306) = 38.99, p < .001$

The moderation effect of mindfulness was significant from role overload to task performance ($p < .001$, $\Delta R^2 = .02$) but non-significant from occupational stress to task performance ($p > .05$, $\Delta R^2 = .01$). The conditional effect of role overload on task performance was significant at low (-10.89, b = -.28, 95% CI [-.39, -.18]) and medium (0, b = -.18, 95% CI [-.26, -.10]) levels, but non-significant at high (10.89, b = -.07, 95% CI [-.18, .03]) levels of mindfulness. The direct effects of role overload (b = -.18, $p < .001$) and occupational stress (b = -.35, $p < .001$) on task performance were significantly negative. Conversely, the effects of mindfulness on task performance were significantly positive (b = .14, $p < .001$ and b = .08, $p < .001$). Both role overload and occupational stress negatively impacted task performance, whereas mindfulness positively influenced task performance for both paths. Bootstrap 95% confidence intervals for all significant relationships excluded zero, confirming the significance of the results.

Table 18

Mindfulness moderates Between Role Overload and Contextual Performance and between Occupational stress and Contextual performance (N = 310)

IV	Model c'-path			Model b -path		
	b	SE	p	b	SE	p
RO (c'), OS(b)	-.22	.08	.00	-.47	.08	.00
Mindfulness	.14	.04	.00	.05	.04	.19
ROxM, OSxM	.01	.01	.13	.02	.01	.07

Model for the c'-path $R^2 = .08, F(3, 306) = 8.78, p < .001$, Model for the b -path $R^2 = .16, F(3, 306) = 21.22, p < .001$,

The moderation effect of mindfulness was non-significant from Role overload to Contextual performance, $p > .05$, $\Delta R^2 = .01$ and from Occupational stress to Contextual performance $p > .05$, $\Delta R^2 = .02$. The direct effect from Role overload to Contextual Performance and Occupational stress to Contextual Performance was significantly negative b = -.22, $p < .001$ and b = -.47, < .001. While the effect from Mindfulness on Contextual Performance was significantly positive for c' but non-significant for b path, b = .14, $p < .001$ and b = .05, $p > .05$. Both role overload and occupational stress negatively impacted Contextual Performance while Mindfulness had a significant positive effect for path c'. Bootstrap 95% CI for relationships excluded zero confirming the significance of the relationships.

Table 19

Mindfulness moderates Between Role Overload and Counterproductive Work Behavior and between Occupational stress and Counterproductive Work Behavior (N = 310)

IV	Model c'-path			Model b -path		
	b	SE	p	b	SE	p
RO (c'), OS(b)	.19	.04	.00	.13	.05	.02
Mindfulness	-.08	.02	.00	-.05	.02	.03
ROxM, OSxM	.00	.00	.39	-.01	.00	.07

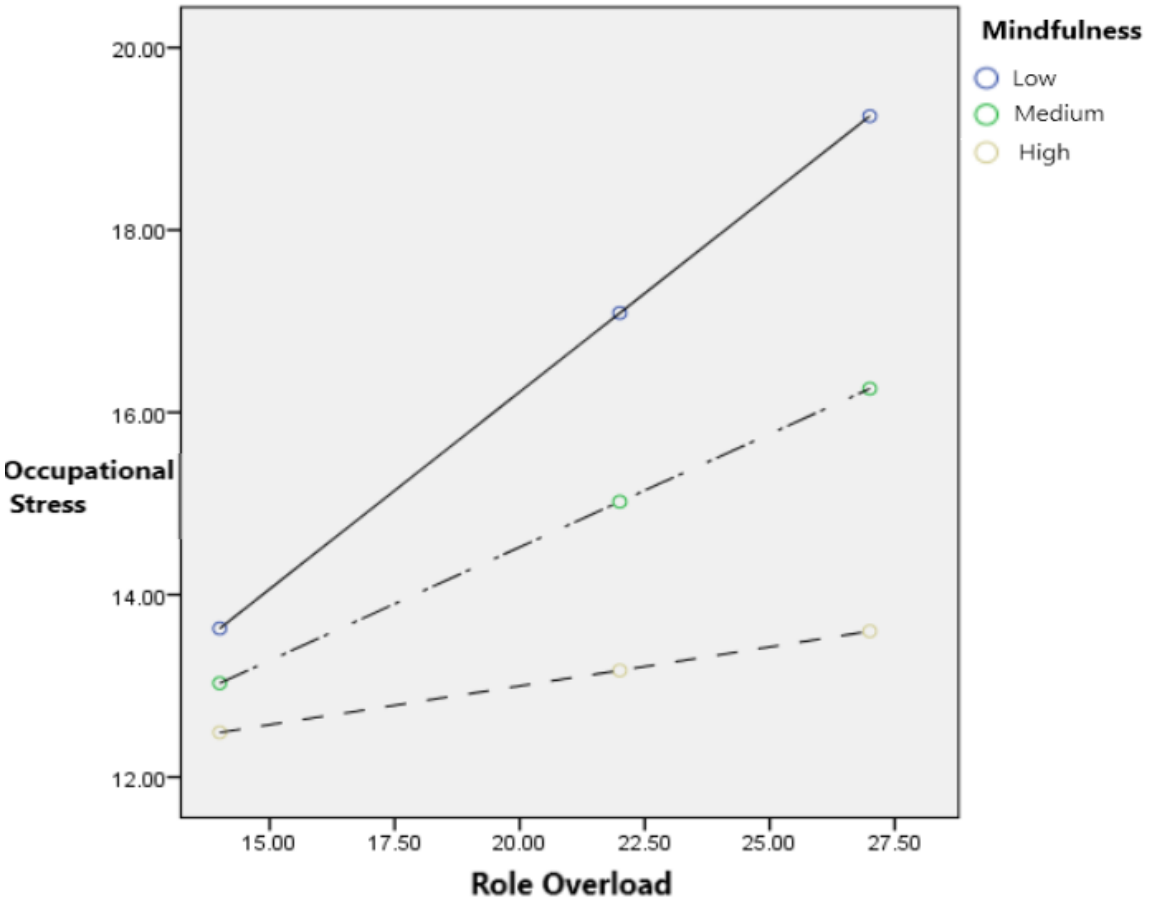
Model for the c'*-path* $R^2 = .10, F(3, 306) = 11.72, p < .001$, *Model for the b -path* $R^2 = .07, F(3, 306) = 8.27, p < .001$, *CWB= Counterproductive Work Behavior*

The moderation effect of mindfulness was significant from role overload to CWB ($p < .001$, $\Delta R^2 = .02$) but non-significant from occupational stress to CWB ($p > .05$, $\Delta R^2 = .01$).

The direct effect from Role overload to CWB and Occupational Stress to CWB was significantly positive $b = .19$, $p < .001$ and $b = .13$, $p < .001$. While the effect of Mindfulness on CWB was significantly negative $b = -.08$, $p < .05$ and $b = -.05$, $p < .05$. Role overload and Occupational Stress had a positive effect on CWB while Mindfulness had a positive effect for both paths. Bootstrap 95% CI for relationships excluded zero confirming the significance of the relationships.

Figure 5

Graphical representation of moderation



The graph's trend lines illustrate a diminishing effect of Role-Overload on occupational stress as mindfulness levels increase. Specifically, at higher mindfulness levels, the slope of the trend line becomes less steep, indicating a reduction in the rate at which occupational stress escalates in response to Role-Overload. Conversely, at lower mindfulness levels, the trend line exhibits a more pronounced angle, suggesting a stronger correlation between Role-Overload and increased occupational stress. This observation underscores the potential moderating role of mindfulness in mitigating the adverse impacts of Role-Overload on occupational stress.

Table 20

t-test for significant differences between scores of Role-Overload, Mindfulness and occupational stress based on Marital status and family structure (N = 308)

Variable	Demographic	n	M	SD	SEM	t (306)	p
	Married	193	21.48	5.29	.38	2.24	.03
Role-Overload	Unmarried	115	20.03	5.81	.54		
	Married	193	4.09	0.71	.05	3.03	.003
Mindfulness	Unmarried	115	3.84	0.73	.07		
	Married	193	0.26	4.88	.35	1.23	.22
Occupational Stress	Unmarried	115	-0.46	4.93	.46		
	Joint	103	21.25	4.51	.44	2.89	.00
Role-Overload	Nuclear	155	19.42	5.62	.45		

Table 15 shows that there was a significant difference in terms of Marital Status on Role-Overload according to t-test, ($t(306) = 2.24$, $p < .01$). Nurses who were married scored higher on Role-Overload in comparison to the unmarried nurses with M= 121.48 and M= 20.03 respectively. There was also a significant difference on the scores of mindfulness ($t(306) = 3.03$, $p < .01$) for married and unmarried nurses M=4.09 and M=3.84. There was also no significant difference ($t(237.91)) = 1.23$, $p > .05$) on the scores of Occupational stress and there was a no significant difference in terms of Marital Status on Task Performance ($t(306) = 0.439$, $p > .05$).contextual performance ($t(230.84) = 0.413$, $p > .05$) or on the scores of Counterproductive work behavior ($t(306) = -0.24$, $p > .05$). There was however significant difference in terms of nuclear and joint family system for scores on Role-Overload ($t(306) = 2.89$, $p < .001$. W

Discussion

Understanding the impact of stress and stressors on performance is of great importance especially so in the nursing field. We have a need to understand the factors that may hinder and buffer the negative effects of stress and stressors on performance; hence the following research was carried out to understand the interactions between Role-Overload, Occupational Stress, Mindfulness and Job performance. The research sample was chosen to be nurses due to their unique job stress setting owing to their daily exposure to mortality stress and overburdened work conditions. As shown in Table 7 Responses of a total of 310 nurses were included in the final results among which the majority were females owing to the fact that females make up the majority of the nurses in Punjab Pakistan: 93.9 % females in comparison to a mere 6.03 % male nurses (Pakistan Nursing Council, 2015-2016). Table 8 shows that tables were found to be reliable in the nurse sample.

Initial analysis was conducted to see whether or not Occupational stress functions as a mediator between Role-Overload and Job performance. The results of Table 10, 11 and 12 show the mediation was sufficiently significant, effect of the mediator was present in the study sample's Role-Overload and job performance relationship. The fourth hypothesis, that occupational stress would act as a mediator between Role-Overload and the three dimensions of job performance was accepted; as the results indicated that occupational stress fully mediated the relationship between Role-Overload and task performance, as well as Role-Overload and Contextual performance. These results imply that the effect of Role-Overload on task performance and contextual performance is being fully mediated/directed by the level of occupational stress experienced by the nurses, such that an increase in occupational stress leads

to a stronger negative relationship between Role-Overload and (Task and Contextual) performance i.e. increases in occupational stress may lead to reduced task and contextual performance among nurses experiencing high Role-Overload. As there is full mediation; Role-Overload does not have a significant direct effect on task and contextual performance. We can find literary evidence to back the findings as many research shares that work stress often mediates the relationship between stressors and worsened outcomes among professionals by worsening the effects of the stressor, be it Role-Overload or work overload (Khader & Alwagfi, 2020; Naru & Rehman, 2020; Jia et al., 2022). Similarly, research by Abbasi & Janjua (2016) in Pakistan's banking sector found that job stress mediates the relationship between work overload and performance, as such literary evidence points to occupational stress as a possible mediator with potential to negatively impact stressor and performance (Akkoç et al., 2021). Concerning Role-Overload's non-significant relationship with task and contextual performance, Table 10 and 11, studies show that stressors have a complicated relationship with performance, such that some studies even find it boosts performance in the right conditions (Lin & Ling, 2018; Huang et al., 2021), as such it may not be entirely out of character for Role-Overload to not appear insignificant when not being measure along with a mediator or moderator as results did show that the total effect was significant.

Similarly, in Table 12 occupational stress partially mediates the relationship between Role-Overload and counterproductive work behavior. This means that a portion of the effect of Role-Overload on counterproductive work behavior is explained by the mediating role of occupational stress, meaning that as job stress increases the relationship between stressors and negative outcomes for workplaces becomes stronger (Purba et al., 2019; Suroso et al., 2020). Furthermore, Affective Events theory also proposes that the negative moods and emotions

propagated by job stress can lead to certain behaviors that may be counterproductive and harmful for the wellbeing of the organization (Naru & Rehman, 2020; Shahzad et al., 2020). There also remains a direct effect of Role-Overload on counterproductive work behavior which means that Role-Overload would influence counterproductive work behavior regardless of the presence of occupational stress. Research findings also show that being under high Role-Overload can lead to higher irritability and negative affect that often cannot even be moderated by a Proactive personality (Zhang et al., 2019), the findings are also supported by the affective events theory (Weiss & Cropanzano, 1996).

The fifth hypothesis was that a moderated mediation would occur, where mindfulness would moderate the mediated path, moderated mediation was only found significant for the path from Role-Overload to job stress. The results of the moderated mediation analysis, Table 13, 14 and 15, demonstrate that moderated mediation was significant for two out of three subscales of job performance showing that the mediating role of Occupational Stress is influenced by the level of Mindfulness on path for task and contextual performance. There also appeared to be no moderated mediation on path c (Role-Overload to performance), the results are as expected as the effect of Role-Overload on performance disappears in the presence of job stress i.e. it is fully mediated by job stress as such no treatment effect of mindfulness was observed in the moderated mediation output. One possible reason for moderated mediation to be significant for only path a (Role-Overload to job stress) can be understood as the separate nature of effect of stressor as compared to stress (Lazarus & Folkman, 1984); the moderated mediation being significant only between role-overloads effect on job stress implies that the individuals perception of Role-Overload have significant effect on their perceived job stress, while the effect of stress that has already incurred psychological damage proves more difficult to mend (Hobfoll, 1989).

For both task performance and contextual performance, mindfulness moderated the mediation effect of Role-Overload and occupational stress on the two positive dimensions of performance for low to medium values; however non-significant moderation was observed for high values of mindfulness. Mindfulness has been observed in previous research to moderate between relationships similar to Role-Overload, job stress and performance, i.e. one research on nurses found that mindfulness successfully buffered the negative effects of Role-Overload on Sleep Quality (Na et al., 2022), between Job satisfaction and job stress among nurses (Lee et al., 2019) as well as a moderated mediation of stressor (disease) to job stress to turnover (Lee et al., 2020). Furthermore, the findings also indicate that effects of mindfulness on performance are most significant for low to slightly higher i.e. medium level. However, after values increase beyond the medium threshold of mindfulness, the results become unpredictable. Although Mindfulness is widely accepted as a cure all for psychological distress, some researchers warn of the adverse effects of mindfulness as well (Howard, 2016; Van Gordon et al., 2017).

Research shows that for some people mediation related health effects can be quite common among those in mindfulness training programs (Britton et al., 2021). Another possible reason may be that the type of stress experienced by those with low and medium levels of mindfulness may significantly differ from those with higher levels of mindfulness; nurses are expected to be mindful and careful when performing their jobs, this may lead to them scoring higher on the mindfulness scale as they gain more experience, evidenced by the findings of this research, however the more experienced a nurse is, the more likely they are to be in a leadership position and have higher expectation from other, this may be the cause of their high job stress, owing to their unique position in the job setting, research shows how burnout is more common among nurse leaders (Kath et al., 2013).

For counterproductive Work behavior, Table 15, the index of moderated mediation also showed that mindfulness moderates the mediated path from Role-Overload to job stress to Counterproductive work behavior. However, there was a direct effect of Role-Overload on counterproductive behavior in contrast to findings for task performance and contextual performance. The literature on Role-Overload and job stress finds conclusive support for the claims that high levels of the stressor that is Role-Overload and strain such as job stress can lead to an increase in negative work behaviors such as counterproductive work behavior (Zhang et al., 2019).

Simple Mindfulness moderation as shown in table 17, 18, 19, was observed to be significant on the relationship between Role Overload and Task performance while no significant moderation was observed on the path between Occupational Stress and Job Performance. Literature supports this notion. Studies have shown that as Mindfulness increases, individuals' ability to cope with Role overload also increases, ultimately reflected in their Job performance (Dane, 2011, 2015). This can be explained by mindfulness practices promoting better emotional regulation and focus, allowing individuals to prioritize tasks and manage workload demands more effectively (Chu & Mak, 2020). However, Occupational stress proves more difficult to manage, even for those with higher states of mindfulness. Even individuals with strong mindfulness skills can incur psychological damage in response to stress, which may explain why mindfulness may prove insufficient in mitigating the effect of said stress on performance (Faraji et al., 2019). Occupational stress can encompass a wider range of factors beyond workload, such as interpersonal conflicts or lack of control, which mindfulness practices may not fully address.

The findings from the study provide support for the importance of Mindfulness as a moderating factor in the relationship between Role-Overload, Occupational Stress, and Job Performance. These results have implications for understanding how Mindfulness interventions may be beneficial in mitigating the negative impact of Role-Overload and Occupational Stress on job performance. For a comprehensive overview of the regression results,

A correlation analysis was also run, Table 9, to see how the variables interacted between each other. The results show the relationships between age, experience, Mindfulness, Role-Overload, Occupational stress, task performance, Contextual performance, and counterproductive work behavior.

Age was observed to display a strong positive correlation with experience, indicating that as individuals get older, and their experience also increases in their respective fields. This result is not surprising, as experience typically tends to accumulate over time (Chung et al., 2015). Age also showed moderate positive correlations with mindfulness and task performance. As individuals age, they may have more opportunities to develop better mindfulness skills, and overtime skillfulness usually also improves when employees perform the same tasks over and over again over the course of years; this may explain why task performance and mindfulness are positively correlated to age (Boekel & Hsieh, 2018; Chung et al., 2015).

However, age did not have any significant relationship with Role-Overload, counterproductive work behavior, contextual performance, and job stress. Some studies find similar results as one study among Russian adults found that age did not have any effect of perception of work overload (Nguyen et al., 2014). As Individuals age various factors may influence their Role-Overload, one study focused on how various factor associated with age affected information overload, while both older and younger adults suffer from it, their reasons

are different (Benselin & Ragsdell, 2016) a similar effect could be observed with Role-Overload as experience may lessen perception of Role-Overload and improve job stress, cognitive decline due to age may have an adverse effect on it, as such unless such variables are taken into consideration and controlled for, the association cannot be fully understood.

The non-significant findings for age's correlation with contextual performance and counterproductive work behavior and could be associated to the difference in personality factors among the nurses, age does not govern personality and the type of personality in addition to job resources can have a great impact on socially conducive contextual performance and socially detrimental counterproductive work behavior, in addition to personality health may also affect their behavior, such that those with worse health may be more irritable and tired; hence, they would be less likely to engage in prosocial behavior such as contextual performance and more likely to engage in counterproductive work behavior and such that without accounting for those factors we cannot ascertain the relationship between age and these variables (Meyers et al., 2020).

Experience demonstrated a significant positive correlation with task performance and Mindfulness. These findings are similar to previous correlations of age as results indicate that individuals with more experience may exhibit better task performance compared to less experienced individuals and are more likely to have a higher level of Mindfulness. These findings are consistent with literature as both task performance and mindfulness increase with experience (Boekel & Hsieh, 2018; Chung et al., 2015). Experience did not show any statistically significant correlation with the other variables, meaning that the relationship between experience and these other measures were not strong or clear enough to be able to definitively make any reasonable conclusions. Experience appears to be somewhat concurrent with age as such similar

reasoning can used to understand it's lack of significant relationship with Role-Overload, occupational stress, contextual performance and counterproductive work behavior, as intervening variables are not assessed in correlation analysis, factors such as personality, health, organizational support may cause experienced individuals to act variably in terms of contextual prosocial behavior and counterproductive behaviors as Bear and Hwang (2015) found that the closer and individual was to retirement the lower was their contextual prosocial behavior. Additionally, while Role-Overload should increase with seniority, perception of Role-Overload and stress may in fact decrease due to acquired expertise, as such a simple correlation analysis that does not take into account the complex interplay of variables is bound to yield non-significant findings (Kunte et al., 2017).

Counterproductive Work Behavior was positively correlated with Role-Overload and Job Stress. This means that as Role-Overload and Job stress increase so does counterproductive work behavior. Studies show that discontent employees that experience work and Role-Overload in the presence of stressful work conditions are more likely to show behaviors that may harm the wellbeing of an organization i.e. more complaining and vocal dissent (Rotundo & Sackett, 2002; Zhang et al., 2019). As such hypotheses 2(c) and 3(c) were accepted.

Counterproductive Work Behavior also had a negative correlation with Mindfulness, Task Performance and Contextual Performance. These findings show how Counterproductive work behavior can be detrimental to task and contextual performance (Lievens et al., 2008; Rotundo & Sackett, 2002; Fernández-del-Río et al., 2019) and the beneficial effects that Mindfulness may have on job performance by reducing counterproductive work behavior (Long, 2017). Studies in healthcare support that mindfulness and experienced meaningfulness can lead to positive consequences for counterproductive work behavior of individuals, these findings are

also supported in the nursing field (Long & Jenkins, 2018). Similarly studies also show that nurses engaging in more counterproductive behavior not only have lowered performance but also negatively impact their organization and endanger the wellbeing of their patients (Zaghini et al., 2016).

Role-Overload showed positive correlations with Job stress, meaning hypothesis 1 was accepted, and had a negative correlation with Task Performance and Contextual Performance. Hypotheses 2(a) and 2(b) were accepted. These results imply that as Role-Overload increases as does Job stress this outcome is expected as an increase in stressor usually translates into an increase in strain/stress, studies carried out in Asian and western countries also support these findings (Karimi et al., 2014; Mittal & Bhakar, 2018; Dodanwala et al., 2022) This also means that their performance (Task and contextual) will inevitably suffer under the pressure of the stressor. Studies support that in most cases an increase in Role-Overload increases psychological strain and has been linked to reduced work performance (Tang & Vandenberghe, 2021).

Role-Overload also appears to significantly, albeit weakly, correlate with Mindfulness. These findings may imply that those with high Role-Overload can also have high mindfulness at first the findings may appear flawed however many researchers identify Role-Overload dialectically some studies find that individuals experience Role-Overload as both hindrance and challenge stressors, implying the existence of positive implications of Role-Overload (Huang et al., 2021), this may explain how Role-Overload is positively correlated with mindfulness in the present sample.

Job stress negatively correlates with task performance, and contextual performance. Supporting the 3(a) and 3(b) hypothesis. These results mean that individuals under higher levels of job stress have a tendency to exhibit lower performance (tasks and contextual) whereby

lowered task and contextual performance are found in conjunction with employees under high occupational stress, studies show similar results (Patro & Kumar, 2019; Nisar & Rasheed, 2020). Job stress also negatively correlated with mindfulness. These findings imply that those with lower mindfulness are more likely to experience high levels of stress and strain, i.e. those that appear to experience higher stress are also most likely to be low mindful individuals, various studies support that increasing mindfulness by including medication and mindful practices individuals can reduce their stress levels (Lee et al., 2019; Sulosaari et al., 2022).

Mindfulness demonstrated significant positive correlations with task performance and Contextual performance, indicating that individuals who exhibit higher levels of mindfulness tend to perform better at their own task and are also more helpful to their colleagues hence the high contextual performance, similar results have been found in other research findings (Hyland et al., 2015; Şahin et al., 2020; Janssen et al., 2020).

Task performance is also positively correlated to contextual performance, these findings may imply that those who are more adept at performing their own jobs are more likely to help their colleagues and are more active participants in the performance of extra roles, there is literary evidence that supports the claim that one's own proficiency and ‘cooperative extra role behavior’ in the job may not be mutually exclusive (Fernández-del-Río et al., 2019).

A simple t test analysis was also conducted for the difference in score of married vs unmarried and nuclear vs joint family style. Significant results showed that married individuals scored slightly higher than unmarried individuals on both Role-Overload and mindfulness while no significant difference in score of occupational stress and the three subscales of job performance were observed. The only significant difference between joint and nuclear family structure among nurses was an increased Role-Overload among those in joint family structures.

Since both married individuals and those in joint families have more roles to perform and most of the nurses in this study were females, it can be argued that female employees, especially in the context of Asian culture are expected to perform most at home roles in addition to their job roles (Vatharkar, & Aggarwal-Gupta, 2020; Halinski, M., & Duxbury, 2022).

As for the results of low mindfulness among unmarried nurses; most of the unmarried nurses in the study were very young and had significantly less job experience which may be why they had lower mindfulness (Ford et al., 2020). Since there were no significant differences in occupational stress and job performance, we can logically conclude that both married and unmarried nurses experience the same degree of job-related stress and have the same level of performance, as one study found that both married and unmarried women in Pakistan experience lower levels of stress when they are well adjusted in family and receive social support, the lack of difference may be due to the fact that both groups are well respected due to their employment status (Abbas et al., 2019). The non-significant relationship between job performance among married and unmarried nurses is also supported by literature as one research point to the similar work motivation among married and unmarried individuals (Denny et al., 2024), while some find that working women have higher performance due to higher motivation (Patel et al., 2006) we could conclude that the motivation and higher Role-Overload may balance out the performance as such both groups end up with similar performance.

This research explores the intricate relationship between occupational stress, Role-Overload, mindfulness, and job performance within the nursing field. The study was conducted in the unique stress setting of nurses. The findings revealed compelling insights regarding the role of occupational stress as a mediator between Role-Overload and various aspects of job performance. These findings show the pivotal role of occupational stress in shaping the

perception of Role-Overload and its impact on the three main dimensions of job performance among nurses. The findings highlight the nuanced interplay between stressors and stress; suggesting that while stressors amplify negative outcomes for job performance, its negative effect is also influenced by stress and strain.

Moreover, the study introduced the concept of mindfulness as a moderator in the Role-Overload—>job stress—>job performance relationship. The results indicated that mindfulness exerts a significant moderating influence on the mediating role of occupational stress in task and contextual performance and that the impact of mindfulness was particularly pronounced at low and moderate levels, indicating that its effect on performance is most notable when it reaches a certain threshold above which the conditions for the individuals potentially change too much to accurately moderate the predicted mediation.

The correlations explored among the variables provided additional insights. Age and accumulated experience were shown to be quite positive for performance in nursing. Counterproductive work behavior emphasized the potential consequences of negative workplace behaviors. The positive correlation of mindfulness with task and contextual performance emphasizes its positive influence on the positive dimensions of job performance. The findings underscore the importance of considering stress management and mindfulness interventions to enhance nurses' well-being to improve caregiving. These insights have implications not only for nursing but also for other fields, shedding light on how potential stressors' negative effects may be mitigated and the adverse effects of stress can be buffered to enhance overall workplace performance.

Conclusion

In conclusion, the main findings of this research show that Role-Overload is negatively correlated with Task and Contextual performance and positively correlated to Occupational stress and Counterproductive work behavior. Furthermore, results show that the effect of Role-Overload on job performance is mediated by occupational stress and that mindfulness moderates this mediated relationship by moderating the path of Role-Overload to occupational stress. Based on these findings we can conclude that Role-Overload acts as a hindrance stressor when occupational stress is high, and mindfulness is low while for nurses with high Mindfulness the negative outcomes of high Role-Overload can be significantly reduced.

Limitations and recommendations

Although the present research aimed at collecting detailed information from the sample. One possible recommendation for future research can be the inclusion of specific sources of occupational stress, as it would prove useful to identify the sources when designing stress preventative measures. Another possible limitation of this research is that the majority of the nurses in this quantitative research were all approached during their work hours as such, in consideration for their time and to ascertain their full attention, ensuring reliability and validity of the responses, the questionnaires were kept short and to the point. However, lengthy, and detailed questionnaires with sub factors can provide a more detailed and clearer understanding of the topic being studied yet in consideration for the limited attention of nurses, lengthy questionnaires could not be used. As such future researchers may benefit from a mixed method approach, by curating a smaller, more willing, volunteer or incentivized, sample. Conducting interviews along with qualitative analysis (mixed method), will allow the phenomenon of Role-Overload as a ‘mixed stressor' to be understood in more depth (Huang et al., 2021) and provide

the researchers with a larger collection of possible control variables to ensure there are no intervening variables.

Implications:

The finding of this research allows the opportunity to understand Role-Overload among nurses in depth, Role-Overload is typically assumed to act as a negative influence on performance and health, however the present research shows a clearer picture on how Occupational stress plays a central role in this relationship. Mindfulness interventions have been widely used in organizational setup to reduce the impact of stress on performance, the present research provides evidence that there may also be a role of mindfulness in the perception of Role-Overload as a hindrance or a challenge stress, as those with higher mindfulness do not appear to be as negatively affected by excessive role demands. The present research may prove useful in designing intervention programs to lessen the perception of Role-Overload as a negative stressor by reducing work related stress and introducing mindfulness interventions. These findings have meaningful implications on the reassessment of Role-Overload as an opportunity for growth and meaningfulness in their life rather than as a harmful hindrance.

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Appendix A

Respected Sir/Madam ,

I am writing to request your assistance in the collection of survey data for my university research. My thesis is titled [Role overload and Job performance among nurses; Study of Occupational stress and Mindfulness].

To collect the necessary data, I plan to distribute physical and online surveys to a wide range of participants. The survey will take approximately 10 minutes to complete and will ask questions about [Role overload, job performance, occupational stress and mindfulness].

I am requesting your support by allowing me to distribute the survey to your organization's members or employees. I assure you that all responses will be kept confidential.Your support will be invaluable in ensuring the success of my thesis. Your participation in this project will not only contribute to the academic literature on [Mindfulness and Occupational stress], but it will also benefit hospitals by providing valuable insights into the opinions and attitudes of nurses.

I have attached a copy of the survey for your review, along with a consent form for participants. If you have any questions or concerns, please do not hesitate to contact me at [zahirarex1@gmail.com].

Thank you for your consideration and support.

Sincerely,

Faiza Khalid
NUML-S21-11288

Appendix B

Consent Form

Consent Form: The purpose of this form is to provide you with information about the research study and to obtain your voluntary participation.

My name is Faiza Khalid and I am a Student at NUML University working on my M.phil degree in Psychology. I am conducting a research study entitled "**Role overload and Job performance among nurses; Study of Occupational stress and Mindfulness"**

The following questions will be used to collect data on Role overload, Job performance, Mindfulness and Occupational stress, the findings of the research will be used to add to literature and understand the effects of Role overload on Job among nurses; as well as the effect of Mindfulness and Occupational stress on this relationship.

The participants are requested to fill the options given after reading each statement. The total time required to finish the study will be about 10 to 15 minutes. Your participation will be confidential and voluntary. If you choose to withdraw from the study at any point you can do so.

If you would kindly fill out the following questions it would be greatly appreciated. If any confusion or problems occur the participants can contact the researcher at zahiraex1@gamil.com. Please indicate your willingness to answer by signing and dating the form below.

Furthermore it is highly unlikely to pose any risk to you.Your data and information will be protected and the collected information will be aggregated for data analyses and findings, meaning all survey response data will be grouped together.

Appendix C

Demographic Information

Identification: First name or email(optional) : [_____] **Date**: [_____]

General Information:

Age (in years):				
Gender :	○ Male	○ Female	○ Other	
Professional education:	○ Diploma in nursing	○ BSc	○ MSN/MPH	○ Above Masters
Economic status	○ Upper	○ Upper-Middle	○ Middle	○ Lower
Position	○ Primary Nurse	○ Senior Nurse	○ Supervisor	○ Chief Nurse
Family Structure	○ Nuclear		○ Joint	
Marital Status	○ Married		○ Unmarried	
Hospital sector	○ Public		○ Private	
Employment Type	○ Formal		○ Contract	
Hours of work per week? (average)				
How many years of Experience as a nurse?				
Average monthly income?				

Appendix D

Reilly's Role-Overload Scale (6-item)

1. I have to do things that I do not really have the time and energy for.
2. I need more hours in the day to do all the things that are expected of me.
3. I cannot ever seem to catch up.
4. I do not ever seem to have any time for myself.
5. There are times when I cannot meet everyone's expectations.
6. I seem to have more commitments to overcome than other parents I know.

Strongly Disagree, Disagree, Uncertain, Agree, Strongly Agree

Appendix E

Trait Mindfulness

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost always	Very frequently	Somewhat frequently	Somewhat infrequently	Very infrequently	Almost never

1	I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
2	I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
3	I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
4	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
6	I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
7	It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
8	I rush through activities without being really attentive to them.	1	2	3	4	5	6
9	I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
10	I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
11	I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
12	I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
13	I find myself preoccupied with the future or the past.	1	2	3	4	5	6
14	I find myself doing things without paying attention.	1	2	3	4	5	6
15	I snack without being aware that I'm eating.	1	2	3	4	5	6

Appendix F

Job Stress

Below is a collection of statements about your everyday Job experience. Using the 1-5 scale below, please indicate how frequently or infrequently you currently have each experience.

		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
1	A lot of the time my job makes me very frustrated or angry.	1	2	3	4	5
2	I am usually under a lot of pressure when I am at work.	1	2	3	4	5
3	When I'm at work I often feel tense or uptight.	1	2	3	4	5
4	I am usually calm and at ease when I'm working	1	2	3	4	5
5	There are a lot of aspects of my job that make me upset.	1	2	3	4	5

Appendix G

Job Performance

Please answer the following questions by deciding to what extent each item is characteristic of your actions and behavior in regards to your performance at work.

		Seldom	Occasionally	Sometimes	Frequently	Always
1	I managed to plan my work so that i finished it on time	1	2	3	4	5
2	I kept in mind the work result i needed to achieve	1	2	3	4	5
3	I was able to set priorities	1	2	3	4	5
4	I was able to carry out my work efficiently	1	2	3	4	5
5	I managed my time well	1	2	3	4	5
6	On my own initiative i started new tasks when my old tasks were complete	1	2	3	4	5
7	I took on challenging tasks when they were available	1	2	3	4	5
8	I worked on keeping my job related knowledge up to date	1	2	3	4	5
9	I worked on keeping my work skills up to date	1	2	3	4	5
10	I came up with creative solutions for new problems	1	2	3	4	5
11	I took on extra responsibilities	1	2	3	4	5
12	I continuously sought new challenges in my work	1	2	3	4	5
13	I actively participated in meetings and/or consultations	1	2	3	4	5
14	I complained about minor work related issues at work	1	2	3	4	5
15	I made problems at work bigger than they were	1	2	3	4	5
16	I focused on the negative aspects of situation at work instead of the positive aspects	1	2	3	4	5
17	I talked to colleagues about the negative aspects of my work	1	2	3	4	5
18	I talked to people outside the organization about the negative aspects of my work	1	2	3	4	5