

# Psychological Flexibility and Occupational Stress of Nurses: Mediating Role of Emotional Regulation

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## ABSTRACT

**Aim of the study:** This current study explored the relationship between psychological flexibility, emotional regulation, and occupational stress of nurses. Furthermore, this study also aimed to study the mediating role of emotional regulation between psychological flexibility and occupational stress of nurses.

**Method:** This study has employed a cross-sectional design and used correlational research strategy. The data was collected employing purposive sampling technique from ( $N=366$ ) nurses working in different tertiary care hospitals of twin cities of Pakistan i.e., Islamabad and Rawalpindi. Both men and women nurses were included in the sample. Psychological Flexibility Questionnaire, Scale of Emotional Self-Regulation, and Subjective Job Stress Scale were used as measures of these study variables.

**Findings:** Results of Pearson Product Moment Correlation brought out a significant positive relationship ( $r = .49^{**}$ ) between psychological flexibility and emotional regulation, and a significant negative relationship ( $r = -.19^{**}$ ) between emotional regulation and occupational stress of nurses. Results of mediation analysis using PROCESS Macro by Hayes (2022) model-4 depicted significant indirect effect (mediating role) of emotional regulation for predicting the occupational stress from psychological flexibility for the sample of nurses. Psychological flexibility significantly predicted ( $\beta = .50^{**}$ ) the emotional regulation into positive direction, while emotional regulation significantly ( $\beta = -.22^{**}$ ) predicted occupational stress into the negative direction. Indirect effect ( $r = -.11^{**}$ ) for the mediation model tested through emotional self-regulation for psychological flexibility and occupational stress of nurses is also significant.

**Conclusion:** In study concluded that the protective role of psychological flexibility for predicting occupational stress operates indirectly through emotional regulation of nurses. Nurses who have higher perceived psychological flexibility will have higher self-perceived emotional self-regulation, which will lead to lower perception of their occupational stress.

**Keyword:** Psychological Flexibility, Emotional Regulation, Occupational Stress, Nurses.

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## 1. INTRODUCTION

Occupational stress among nurses is an important concern that poses a challenge for the healthcare systems to sustain optimal standards of patient care (Ahmed et al., 2024). Challenging nursing and medical care context emerged as one of the leading causes of higher patient mortality in hospital settings (Baye et al., 2020). In developing countries like Pakistan, factors like extensive working hours, understaffing, higher nurse to patient ratio and resource constraints brings many compromises and impacts for nurses' physical health and mental wellbeing (Nazir et al., 2022), may lead towards occupational related stress.

An important concept of psychological flexibility, a phenomenon central to stress management (Hossain & Clatty, 2021). Also incorporating the cognitive, behavioral, and emotional components. Psychological flexibility enables an individual to actively seek more divergence, changes, and is taken as a positive experience (Ben-Itzhak et al., 2014). It is explained as an ability of a person to stay in contact with the present moment with related thoughts and feelings, without any defensive need while adapting behavior according to the situation for the purpose of meeting valuable goals (Lloyd et al., 2013). Offering reduction in emotional disturbances, psychological flexibility improves productivity and mental health at work while (Hayes et al., 2006) mitigating occupational stress (Atkins and Parker, 2012; Biglan et al., 2008).

Psychological flexibility enhances the ability to regulate emotions (Cobos-Sanchez et al., 2022; Dick et al., 2014; Gaukroger et al., 2018). To the best of published knowledge, lesser empirical evidence highlighting the relationship between the two constructs especially in nursing population, though international studies exploring this relationship are also quite thin. For instance (Sanchez et al., 2022) revealed in a study that higher psychological inflexibility is strongly linked with greater difficulties in emotion regulation. However, psychological flexibility emerged to be strongly associated with reduced emotional exhaustion, partly out of the application of adaptive strategies to regulate emotions (Biron et al., 2012).

The demanding profession of nursing entails constant exposure to emotionally charged situations that involve pain, traumas and deaths (Kharatzadeh et al., 2020; Mohamed et al., 2023). Individuals who are more psychologically flexible have reduced susceptibility to getting in control of their internal thoughts and feelings, which could otherwise compromise their practice of goal-directed actions (Ben-Itzhak et al., 2014). In contrast, psychological inflexibility marked by experiential avoidance has strong links with maladaptive coping mechanisms, poor wellbeing and elevated levels of stress (Fergus et al., 2013; Hayes et al., 2006; Nielsen et al., 2018) exhibited the need for psychological flexibility instead of inflexibility.

Nurses are required to regulate their emotions by employing appropriate strategies to ensure their own wellbeing as well as quality of patient care (Fasbinder et al 2019; Lee and Jang, 2019). Emotion regulation involves identifying and adapting to different challenging situations (Mestre et al., 2017). The concept is grounded on the process of deliberate efforts to monitor, analyze and influence emotions in terms of their expression, progression and external display (Domaradzka et al., 2018). Though difficulties in emotion regulation strongly predict burnout in nurses, trainings involving emotion regulation offer considerable reduction in occupational stress (Saedpanah et al., 2016; Salvarani et al., 2019). Strong negative correlations were reported between job stress and emotion regulation (Mohamed et al., 2023). A study found that health care professionals with reduced ability to regulate emotions experienced more stress (Kadavic et al., 2023). Findings from another study depicted strong links between strategies of emotion regulation (like cognitive reappraisal) and reduced levels of occupational stress among healthcare workers (Garcia-Batista et al., 2020).

In research it was found that burnout and expressive suppression or lesser regulation was higher among nurses who made less frequent use of cognitive reappraisal (Sun et al., 2018). In an indigenous study, cognitive emotion regulation emerged as a strong negative predictor of occupational stress (Riaz et al., 2020). Another study in Tehran indicated that negative cognitive emotion regulation among nurses

strongly correlated with higher occupational stress and general health problems (Salehi and Hashemian, 2020). Path analysis in another research found that surface acting which involves emotion regulation and suppression, emerged to have positive correlations with stress and burnout (Kim, 2020).

An imbalance between job demands and nurses' skills and factors like lack of resources, high workload, workplace violence, conflicts with colleagues or patients, and decision-making difficulties result in either emotional instability, or emotional exhaustion, and consequently stress (Reyes-Rodriguez et al., 2024; Sleunyte and Mikaliukstiene, 2022). Employing the basic tenet of COR theory lies in the concept that people are motivated to acquire, protect and foster the acquisition of those resources that hold a value for them, i.e., their resources which can be objects, conditions, personal characteristics or even energies (Jordan et al., 2023). Loss or depletion of these resources results in stress (Bakker and Costa, 2014; Zeidner et al., 2014). Whereas investment in resources is required to recover from losses, or to prevent any future loss of resources (Ojedokun et al., 2014). Its basic concept has been empirically supported by several studies conducted on occupational stress and burnout in working individuals (Buonomo et al., 2022; Osei et al., 2023).

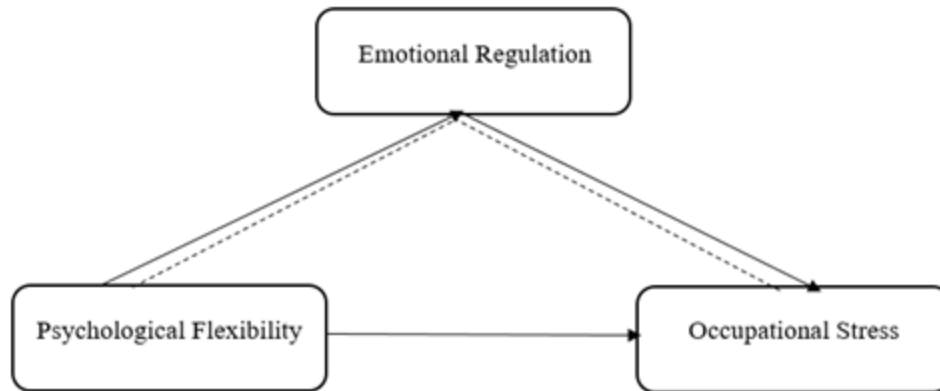
Empirical research has demonstrated the strong links of psychological flexibility (Atkins and Parker, 2012; Biglan et al., 2008) and emotion regulation (Kadavic et al., 2023) with reduced levels of occupational stress. Also, CORE theory's assumption about investment on resources to recover from loss, or prevent stress in future, explains the vital need to work on enhancing the constructs of psychological flexibility and emotion regulation of nurses for managing their occupational stress. Occupational stress of nurses may compromise the ability to offer optimal care to the patients, while psychological flexibility and emotional regulation are pertinent psychological processes to serve as protective factors against occupational stress. Although studies cited above (Cobos-Sanchez et al., 2022; Gaukroger et al., 2018; Sanchez et al., 2022) have highlighted the empirical evidence for the relationship of psychological flexibility and emotional regulation. Whereas the relationship of emotional regulation and job/occupational stress have also been studied frequently into many recent studies (Garcia-Batista et al., 2020; Kadavic et al., 2023; Mohamed et al., 2023; Saedpanah et al., 2016; Salvarani et al., 2019). However, there is a gap in the literature for studying the mediating role of emotional regulation for predicting occupational stress emphasizing the context of nursing from Asian collectivistic cultural backgrounds. Addressing the need to study this relationship empirically, particularly in Pakistani nursing context, the current study explores the relationship between psychological flexibility, emotional regulation, and occupational stress, investigating the mediatory role of emotion regulation between psychological flexibility and occupational stress of nurses' population.

### ***1.1 Study Objectives***

1. To study the relationship between psychological flexibility and emotional regulation, and occupational stress of nurses.
2. To study the role of mediating role of emotional regulation for the relationship between psychological flexibility and occupational stress of nurses.

### ***1.2 Hypotheses***

1. Psychological flexibility and emotion regulation will be positively related for nurses.
2. Psychological flexibility and emotion regulation will be negatively related to occupational stress of nurses.
3. Emotion regulation will mediate the relationship of psychological flexibility with occupational stress of nurses.



**Figure.1** Proposed Model of Mediation

## 2. METHOD

### 2.1 Research Design

With the aim of investigating the relationship between psychological flexibility, emotional regulation, and occupational stress of nurses, this research was conducted using cross-sectional research design and correlational research strategy.

### 2.2 Sample

A sample employing purposive sampling technique was used and participants were selected conveniently from the sample of nursing population with an average age of 27 years from (19-55) range. Data was collected from a total of ( $N=366$ ) nurses, comprising of 23.2% men nurses ( $n=85$ ) and 76.8% women nurses ( $n=281$ ) from different public, private, and semi government hospital settings of Islamabad and Rawalpindi. Most of the participants reported their highest level of education as bachelor's in nursing ( $n=273$ , 74.6%). On average, the participants were found to have a job experience of 3 years within the same organization. Majority were staff nurses ( $n=320$ ; 87.4%) and had been appointed in wards ( $n=283$ ; 77.3%), with an average work duration of 8 hours per day, and average number of working days per week as 6. Approval for conducting this study was obtained from the Institutional Review Board (IRB) of Bahria University. Permissions for using the standardized measures were obtained from their respective authors of the instruments and authorization was secured from hospital administrations for approaching nurses as participants of this study. The purpose of study was shared with the participants while assuring confidentiality and anonymity of the data. Participants were informed of their right of intentional participation and informed consent was taken. The right to withdraw from study at any stage was also assured.

### 2.3 Measures

Three measures along with informed consent and demographic information sheet were used to collect the data.

**Psychological Flexibility Questionnaire.** Psychological Flexibility Questionnaire (PFQ) was originally created by Ben-Itzhak et al. (2014). The Urdu translated version was used in this study which comprises of 20 items that were rated by the respondents on a six-point Likert scale: with 1=*not at all* and 6=*very much*. The scale comprised of five domains including positive perception of change, perception of reality as dynamic, perception of reality as multifaceted, characterization of self as open and innovative and characterization of self as flexible. However, this study only focused on the composite score as a measure of psychological flexibility. Higher scores are representative of higher psychological flexibility.

Reliability estimates for this scale indicate the Cronbach alpha coefficient value as .91 (Waheed et al., 2022).

**Emotional Self-Regulation Scale.** Emotional Self-regulation scale is a subscale of Self Report Measure of Emotional intelligence that was used in this study. It comprises of 27 items that are rated by the respondents on a five-point Likert Scale: 1=*never*, 5=*always*. The scale used composite score to measure nurses' ability to regulate emotions, with higher scores representing higher ability to regulate emotions. The alpha reliability estimate for this scale is .95 (Kalsoom and Kamal, 2018; Khan et al., 2016).

**Subjective Job Stress Scale.** As a measure of occupational stress, the Urdu translated version of Subjective Job Stress Scale was utilized in this study which comprises of 4 items that are rated on a 5-point Likert type scale, with 1= *strongly disagree* and 5=*strongly agree*. The scale uses composite scores and has reliability estimates of .82 (Rauf and Farooq, 2014).

### 3. RESULTS

The results of the current study are based upon the various statistical techniques i.e., alpha coefficient for reliability, mean, standard deviation, skewness, kurtosis, correlation, and mediation through process macro (Hayes, 2022) used.

**Table 1:** Alpha Reliability and descriptive statistics of all scores on Scales (N=366)

| Variables | K  | A   | M     | SD    | Range  |           | Skewness | Kurtosis |
|-----------|----|-----|-------|-------|--------|-----------|----------|----------|
|           |    |     |       |       | Actual | Potential |          |          |
| PF        | 20 | .84 | 83.43 | 12.56 | 20-120 | 29-117    | -.09     | .28      |
| ER        | 27 | .86 | 93.84 | 15.20 | 27-135 | 41-134    | .14      | -.02     |
| OS        | 4  | .75 | 12.22 | 3.62  | 1-20   | 4-20      | .18      | -.51     |

Note. PF=Psychological Flexibility, ER= Emotion Regulation; OS= occupational stress; k= Number of Items,  $\alpha$ = Cronbach's alpha reliability, M= Mean, SD= Standard Deviation.

The results in Table 1 indicate the reliability and normal destitution of the data. All the three measures used in this study are stable and reliable, indicating higher level of alpha. Ranges of scores on the three measures, skewness and kurtosis are also within the recommended ranges indicating normality of data distribution for farther analysis.

**Table 2:** Results for Pearson Product Moment Correlation Analysis (N= 366)

|                           | Psychological Flexibility | Emotional Regulation | Occupational Stress |
|---------------------------|---------------------------|----------------------|---------------------|
| Psychological Flexibility | 1                         | .495**               | -.05                |
| Emotional Regulation      |                           | 1                    | -.193**             |
| Occupational Stress       |                           |                      | 1                   |

Note. \*\* $p < .01$ .

Table 2 represents the results for the analysis of Pearson Product moment correlation. A significant positive relationship was determined between nurses' psychological flexibility and emotional regulation, and a significant negative relationship between emotional regulation and occupational stress emerged. The correlation for psychological flexibility and occupational stress emerged as non-significant.

**Table 3:** Mediation Analysis for Psychological Flexibility, Emotional Regulation, and Occupational Stress for Nurses (N= 366)

| Effect          | Variables           | Psychological Flexibility |            | Emotional Regulation |            |
|-----------------|---------------------|---------------------------|------------|----------------------|------------|
|                 |                     | $\beta$                   | 95% CI     | $\beta$              | 95% CI     |
| Total Effect    | Occupational Stress | -.05                      | -.14; .04  | -                    |            |
| Direct Effect   | Occupational Stress | .06                       | -.01; .13  | -.22                 | -.32; -.12 |
| Indirect Effect | Occupational Stress | -.11                      | -.16; -.06 | -                    |            |

Note. CI= Confidence Interval.  $\beta$ = unstandardized beta

**Figure 2: Mediatory Role of Emotional Regulation**

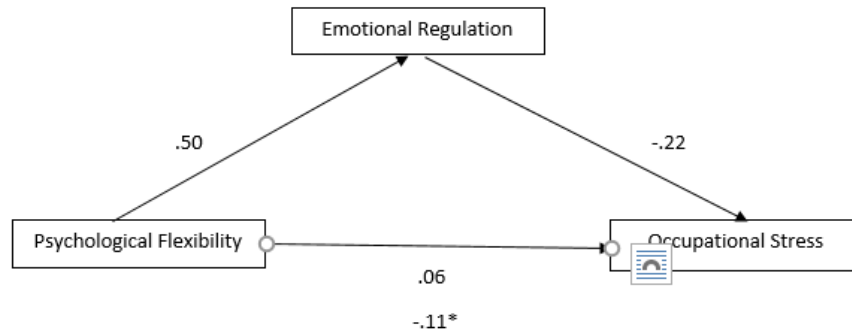


Table 3 and figure 2 represents the results for mediation analysis using PROCESS Macro by Hayes (2022). The direct effect of psychological flexibility on emotional regulation and that of emotional regulation on occupational stress was significant, indicating that psychological flexibility positively predicted emotional regulation ( $\beta=.50$ ,  $B=.50$ ,  $SE=.06$ ,  $p<.001$ ), and emotional regulation further negatively predicted occupational stress ( $\beta=-.22$ ,  $B=.05$ ,  $SE=.01$ ,  $p<.001$ ). Though the direct effect of psychological flexibility on occupational stress was non-significant ( $\beta=.06$ ,  $B=.02$ ,  $SE=.02$ ,  $p=.31$ ), the indirect effect through emotional regulation was significant ( $\beta=-.11$ ,  $B=-.03$ ,  $B=$  Boot  $SE=.01$ , 90% CI=  $[-.05, -.02]$ ) suggesting that the effect of psychological flexibility on occupational stress operated entirely through emotional regulation depicting full mediation.

#### 4. DISCUSSION

This study examines the interplay of psychological flexibility, emotional regulation, and occupational stress of nurses. The data was collected from the sample of nurses, both women and men were approached to collect the data. The analysis of alpha coefficient revealed that all the three measures i.e., psychological flexibility, emotional regulation, and occupational stress for measuring these constructs for nursing population demonstrated higher levels of reliability, as evidence of stability and internal consistency of scores on these measures. These results are consistent with the previous studies (Kalsoom & Kamal, 2018; Khan et al., 2016; Rauf and Farooq, 2014; Waheed et al., 2022) have provided the strong evidence for reliability and validity of these three measures.

The findings of Pearson Product Moment Correlation provided evidence for the relationships between the three constructs studied in this research. A strong positive association between psychological flexibility and emotional regulation emerged and this evidence is consistent with the existing literature as (Baran et al., 2019) denoting that nurses who report themselves as more psychologically flexible also reported better skills in regulating their emotions. For occupational stress, findings showed a negative relationship between emotion regulation and occupational stress, which is also supported by the existing empirical evidence (Kadavic et al., 2023; Mohamed, 2023). However, non-significant correlations emerged for the relationship between psychological flexibility and occupational stress of nurses. However, personal factors play a tremendous role in dealing with stress, sometimes the strong influence of work-related factors might dominate as highlighted by past studies (Nekoranez, 2014; Prada-Ospina, 2019). This stance is also empirically supported by another research which says that both work-related and personal factors are linked with occupational stress; the former holds a stronger association (Fiabane et al., 2013). Consequently, from this we can infer that the intense effect of workplace stressors might have overshadowed psychological flexibility's role in mitigating nurses' occupational stress. These results have supported the first two hypotheses formulated in this study by providing empirical evidence of positive

correlation of psychological flexibility with emotional regulation and negative association of occupational stress and emotional regulation for nurses.

Furthermore, based upon the correctional association of the three constructs studied in this research, the mediational role of emotional regulation in association of psychological flexibility and occupational stress of nurses was also tested. Mediation model 4 (Hayes, 2022) was tested and results deepens the argument for the findings of correlation. The results of mediation model have supported the third hypothesis of this study, which stated that emotional regulation will mediate the relationship of psychological flexibility with occupational stress into the negative direction. The direct positive effect of psychological flexibility on emotional regulation and the direct negative impact of emotional regulation on occupational stress unlike psychological flexibility provide an explanation for non-significant association between psychological flexibility and occupational stress. Most importantly, the significant indirect effect confirms the evidence for mediation, denoting that in nursing profession, psychological flexibility cannot alone offer protection against occupational stress, rather its impact is enacted through skill based emotional regulation. Conclusively, these results are similar with (Fergus et al., 2013; Hayes et al., 2006; Nielsen et al., 2018) mitigating occupational stress (Atkins and Parker, 2012; Biglan et al., 2008) through psychological flexibility and emotional regulation. In another study (Sanchez et a., 2022) it revealed that higher psychological inflexibility is strongly linked with greater difficulties in emotion regulation, whereas (Kadavic et al., 2023; Mohamed et al., 2023) found that health care professionals with reduced ability to regulate emotions experienced more stress. Path analysis in another study indicated that emotion regulation and suppression have positive correlations with stress and burnout (Kim, 2020). Moreover, Empirical evidence further coincides with the findings of a current study while demonstrating the strong relationships of psychological flexibility (Atkins and Parker, 2012; Biglan et al., 2008) and emotion regulation (Kadavic et al., 2023) with reduced levels of occupational stress. These findings are also pertinent because occupational stress may not be caused by the professional demands only, many professional and personal factors like marital status, number of children, family system may also foster stress because of work to family and family to work role demands and pressures. Which may create spillover effects for stress and emotional regulations of nurses and working individuals in general. Overall, the findings of this study have established the empirical piece of evidence to study the indirect role (mediational) of emotional self-regulation for predicting occupational stress from psychological flexibility especially focusing on the context of health care professional i.e., nurses from Pakistani collectivistic society.

## **5. CONCLUSION**

In conclusion, this study concluded that the influence of psychological flexibility in reducing occupational stress is exerted through skill-based self-perceived emotion regulation in demanding context of nursing profession. Furthermore, the findings of this study also provided empirical evidence for the literature gap for studying the mediational role of emotional regulation for psychological flexibility in association with occupational stress of nurses. Which has provided justification for the indirect role of regulatory processes in the form of emotional regulation for reducing occupational stress.

### ***5.1 Limitations and Recommendations***

There are certain limitations for this study as the current study employed self-reported measures offering subjectivity to social desirability bias. Although causality cannot be inferred from cross-sectional and correlation-based designs. However, the proposed mechanism is strongly supported on theoretical and empirical grounds by the converging findings of correlation and mediation (regression based) analysis. Future studies can make use of mixed method designs to further validate the proposed causal mechanism. Gender-wise national studies can provide more in-depth body of knowledge for understanding the dynamics of occupational stress and emotional regulation of nurses specifically.

Demographics bring forward the operational realities of the sample identifying nurses as predominantly young female staff nurses, with high nurse to patient ratio, and working hours signifies a potentially

fertile basis for high occupational stress requires more comparative nature of studies in future. Therefore, more future studies focusing on the contextual and personal factors would bring an in-depth and rich understanding of the regulatory processes like psychological flexibility and emotional regulation for predicting occupation related stress.

## **5.2 Implications**

Considering the relationship of psychological flexibility, emotional regulation, and occupational stress of nurses, it is pertinent to provide training for emotional self-regulation and psychological flexibility to cope with occupational and personal stressors for wellbeing of the nurses. Hospital management especially human resource departments should actively adopt the role of organizational psychologists or occupational health psychologists to address the dire need of the stress and we-being of their human resource for the health care systems and structures of Pakistan.

Observing the higher ratio of women in nursing especially in the context of Pakistan, it is also suggested to develop stress management strategies to reduce the spillover effect of work and family conflicts for occupational stress. Training sessions for capacity building of nurses to attain more psychological flexibility, to learn emotional self-regulation strategies, and to effectively manage occupational stress would be essential to mitigate the inevitable work-related stressors.

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