

# Emotional Intelligence Training to Reduce Nurse Stress in an Online Community

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## Abstract

Nurse stress continues to impact workforce stability, patient outcomes, and organizational performance. Emotional intelligence (EI) has emerged as a strategy to improve emotional regulation and reduce stress. This quality improvement project evaluated the effect of an EI educational module on perceived stress among registered nurses participating in an online nursing community. A pre-post design was used, with participants completing the Perceived Stress Scale-10 (PSS-10) before and one month after the intervention. Results demonstrated a trend in decreased median stress scores from 21.5 (moderate stress) pre-intervention to 12 (low Stress) post-intervention. Although inferential analysis was limited due to unequal sample sizes, findings suggest that EI education may be an effective and scalable approach to reducing nurse stress in online environments. Integrating EI training into professional communities and organizational initiatives may support nurses' well-being and improve practical outcomes.

## Keywords

Emotional Intelligence, Nurse Stress, Online Nursing Community, Perceived Stress Scale, Workforce Well-Being

## 1. Introduction

Stress among registered nurses remains a significant concern affecting individual well-being, patient safety, and organizational outcomes. Elevated stress levels are associated with burnout, decreased quality of care, and increased turnover. As nurses increasingly engage in online professional communities for support and collaboration, these platforms present an opportunity for scalable interventions aimed at improving well-being.

Emotional intelligence (EI), defined as the ability to recognize, understand, and

manage one's own and others' emotions, has been identified as an effective strategy to reduce stress and improve coping. However, limited evidence exists regarding EI interventions delivered within online nursing communities. This project evaluated whether an EI educational module could reduce perceived stress among nurses in such a setting.

## 2. Background and Significance

Nurses experience stress at high rates, with documented consequences including physical and psychological illness, decreased job satisfaction, and impaired patient outcomes. Stress also contributes to absenteeism and workforce attrition, placing additional strain on healthcare systems.

EI has demonstrated effectiveness in improving emotional regulation, resilience, and interpersonal relationships. Studies consistently show an inverse relationship between EI and perceived stress among nurses. Despite this evidence, gaps remain in understanding how EI interventions function in non-traditional, digital environments such as online communities. Addressing this gap is critical as virtual platforms continue to expand in professional nursing practice.

## 3. Methods

### 3.1. Design

A pre-post quality improvement design was used to evaluate the impact of an EI educational intervention on perceived stress.

### 3.2. Setting and Participants

Participants were recruited from the Facebook group "Nurses Helping Nursing Students", an online nursing community [1]. This study received  $n = 39$  and  $n = 7$  respondents, with  $n = 32$  and  $n = 6$  fully completing pre- and post-surveys, respectively. Of these,  $N = 0$  participants provided matched pre-post responses, as surveys were not linked at the participant level. Attrition between time points was 82.1%.

Participants were recruited via a posted invitation within the Facebook group, which included study information and a Qualtrics survey link. The first round of participant recruitment commenced on September 4, 2023, and lasted three weeks before closing the pre-EI intervention survey. The intervention requires a minimum of a month between surveys to monitor for effectiveness. The following week, four weeks after project initiation, recruitment began for the post-intervention PSS-10 survey completion and lasted three additional weeks. The intervention implementation ended on November 10, 2023.

Measures to prevent duplicate responses included single-entry survey settings and screening questions to confirm eligibility.

### 3.3. Intervention

Participants completed an online EI educational module grounded in the four

core domains of emotional intelligence: self-awareness, self-management, social awareness, and relationship management. The module was delivered asynchronously, accessing a YouTube link through the Qualtrics platform, and required approximately 17 minutes to complete. Completion was tracked through the Qualtrics platform, and participants who completed the module were considered to have received the intervention. Content included guided reflection, scenario-based learning, cognitive reframing strategies, and communication skill exercises. Participants were encouraged to apply these strategies during the one-month follow-up period.

### 3.4. Measures

The two data collection instruments utilized in this study were a demographic survey developed by this researcher and the PSS-10 items (Cohen & Williamson, 1988) [2].

#### 3.4.1. Demographic Survey

The population of RNs' demographic data sought in this project include variables of age, gender, setting of professional employment, and length of time in the profession. The variables coded included age, gender, type of professional employment, and length of time in the profession. The participants in this research study completed the demographic survey before completing the pre-PSS-10 items (Cohen & Williamson, 1988) [2] survey and EI interventions.

#### 3.4.2. PSS-10 Items Survey

The Perceived Stress Scale – 10 items (PSS-10 items) created by Cohen *et al.* (1983) effectively measures self-perceived stress levels [3]. The PSS-10 items exhibit significant validity and reliability, with alphas ranging from 0.74 to 0.91 (She *et al.*, 2021) [4] and Cronbach's alpha of 0.865 and 0.796 (Chen *et al.*, 2021) [5]. The PSS-10 items is a 10-point, Likert-type scale that requires the user to report emotions over the past month, containing five possible scale responses: 0 = Never; 1 = Almost Never; 2 = Sometimes; 3 = Fairly Often; and 4 = Very Often (Cohen, 1994) [6]. The participants in this research study completed the PSS-10 items (Cohen & Williamson, 1988) [2] survey before and one month after the EI intervention.

## 4. Data Collection and Analysis

The numerical data in this study were obtained from pre- and post-emotional intelligence (EI) intervention PSS-10 scores. The PSS-10 uses an ordinal 5-point response scale ranging from 0 ("Never") to 4 ("Very Often"). After survey responses were downloaded from Qualtrics into Excel, the data were recoded and checked for accuracy. Scores for questions 4, 5, 7, and 8 were reverse coded, verified, and entered into a spreadsheet. Total scores were then calculated, with possible scores ranging from 0 to 40. The completed dataset was uploaded into SPSS for statistical analysis.

Descriptive statistics were used to examine frequency distribution, central ten-

gency, and variability within the two correlated groups. Median scores were calculated to identify the central tendency of the data. The median pre-EI intervention PSS-10 score was 21.5, while the post-EI intervention median score was 12, suggesting a reduction in perceived stress following the intervention.

Additional descriptive statistics were used to evaluate score variability and determine whether meaningful changes occurred between pre- and post-intervention scores. The range for pre-intervention scores was 29, compared to 25 for the post-intervention scores. The standard deviation (SD) for pre-intervention scores was 7.18 (95% CI [5, 34]), while the post-intervention SD was 8.68 (95% CI [6, 31]). Overall, the range and SD values suggested a relatively normal distribution within the sample.

Because of the small sample size, the range and standard deviation also raised the possibility that outliers could influence the results and lead to inaccurate interpretations. In the post-intervention sample ( $n = 6$ ), scores were 6, 10, 12, 12, 14, and 31. The score of 31 appeared substantially higher than the remaining scores and may be considered an outlier. If this value were removed, the range would decrease from 25 to 8, while the SD would decrease to 3.03. However, the median score would remain unchanged at 12. Variance calculations also differed considerably between the unadjusted sample (75.37) and the adjusted sample (9.2).

Because the PSS-10 produces ordinal data and the median remain unchanged after removing the potential outlier, the participant classifications within the low, moderate, and high stress categories were not affected. Therefore, the dataset remained unadjusted despite the higher variance observed in the unadjusted sample.

## 5. Ethical Considerations

This project involved research with human subjects and was conducted according to ethical research standards. Ethical research requires minimizing risk and harm, protecting privacy and dignity, respecting participant autonomy, safeguarding vulnerable populations, and reporting findings truthfully (Resnik, 2020) [7]. After receiving permission from the administrator of the Facebook group *Nurses Helping Nursing Students* (Nurses Helping Nursing Students, 2023), an application was submitted to the Maryville University Institutional Review Board (IRB). The Maryville IRB determined that this study was exempt from ongoing IRB review because it posed no foreseeable physical, psychological, social, financial, or legal risks to participants. All data collected for this doctoral project will be destroyed after three years. No conflicts of interest were identified in this study.

## 6. Results

### 6.1. Sample Characteristics

Participants were recruited from the Facebook group “Nurses Helping Nursing Students”, an online nursing community. This study received  $n = 39$  and  $n = 7$

respondents, with  $n = 32$  and  $n = 6$  fully completing the pre- and post-surveys, respectively. The sample consisted of 9% male ( $n = 3$ ) and 91% ( $n = 29$ ) female participants pre-intervention, with no participants identifying as “other” gender ( $n = 0$ ) or preferring no to answer to a gender ( $n = 0$ ). The population age composition included 22% 18-25-year-olds ( $n = 7$ ); 31% 26-35-year-olds ( $n = 10$ ); 31% 36-45-year-olds ( $n = 10+$ ); 13% 46-55-year-olds ( $n = 4$ ); and 3% 55 and older ( $n = 1$ ). In the context of the professional settings of employment, 69% worked in an acute care setting ( $n = 22$ ); 9% worked in a primary care setting ( $n = 3$ ); 3% worked in a secondary care setting ( $n = 1$ ), no participants worked in telehealth ( $n = 0$ ); and 19% reported working in another setting, not otherwise listed ( $n = 6$ ). The length of employment of the sample consisted of 16% being employed for less than a year ( $n = 5$ ); 47% employed for one to five years ( $n = 15$ ); 6% employed for six to ten years ( $n = 2$ ); 25% employed 11-20 years ( $n = 8$ ); and 6% employed for greater than 20 years ( $n = 2$ ). Of these,  $N = 0$  participants provided matched pre-post responses, as surveys were not linked at the participant level. Attrition between time points was 82.1%.

## 6.2. Stress Outcomes

Median PSS-10 scores decreased from 21.5 (moderate) pre-intervention to 12 (low) post-intervention (see [Table 1](#)), indicating a trend in reduction in perceived stress levels. These findings are reported as a decrease in median stress scores rather than categorical interpretation.

Higher baseline stress levels were observed among younger nurses, those in acute care settings, and those with fewer years of experience.

Due to unequal sample sizes and no matched responses, inferential statistical testing was not conducted, and can deem the results largely uninterpretable.

In comparing the two groups’ median values, post-intervention scores suggest there was an improvement in nurses’ self-reported stress levels using the EI educational module.

**Table 1.** Pre- and post-intervention PSS-10 scores.

Measure	Pre- and Post-Intervention PSS-10 Scores	
	Pre-Intervention	Post-Intervention
<b><i>Median PSS-10 Score</i></b>	21.5 (Moderate Stress)	12 (Low Stress)

Note: a. Median PSS-10 scores.

## 7. Discussion

Findings from this project suggest that EI education may effectively reduce perceived stress among nurses when delivered in an online format. The reduction in stress scores align with existing literature demonstrating the benefits of EI in improving emotional regulation and coping strategies [8] [9].

The observed reduction in median PSS-10 scores suggests a clinically meaning-

ful improvement, even in the absence of inferential statistical testing. Although statistical significance could not be established due to sample size limitations, the consistency and direction of change support the potential effectiveness of EI as a practical intervention in real-world nursing environments.

The use of an online nursing community as the intervention setting highlights a novel and scalable approach to supporting nurse well-being. As digital engagement among healthcare professionals continue to grow, integrating EI interventions into these platforms offers a practical and accessible solution.

### **7.1. Addressing Methodological Concerns**

Several limitations warrant consideration. The pre-post design without a control group limits causal inference, and unequal sample sizes restricted inferential analysis. Additionally, reliance on self-reported measures introduces potential bias. However, use of a validated instrument (PSS-10) strengthens reliability, and findings are consistent with prior research. Future studies should use randomized designs and larger samples.

Duplicate or redundant content has been removed to improve clarity and flow. Findings from this project suggest that EI education may effectively reduce perceived stress among nurses when delivered in an online format. The reduction in stress scores aligns with existing literature demonstrating the benefits of EI in improving emotional regulation and strategies [8] [9].

### **7.2. Limitations**

Limitations include small and unequal sample sizes, reliance on self-reported data, and lack of inferential statistical analysis. External factors influencing stress were not controlled.

### **7.3. Future Research**

Future research should include larger sample sizes, randomized designs, and long-term follow-up to evaluate sustained effects of EI interventions.

## **8. Implications for Nursing Practice**

Integrating EI training into nursing education and professional development programs may enhance emotional resilience and reduce stress. Online delivery formats provide a cost-effective and scalable method for reaching a broad nursing audience. Healthcare organizations should consider incorporating EI-based interventions into workforce well-being strategies. These findings also support the integration of emotional intelligence into workforce well-being initiatives at the organizational and policy level, aligning with national priorities to address nurse burnout and retention.

## **9. Conclusion**

Emotional intelligence education delivered through an online platform may reduce perceived stress among nurses. Scalable, accessible interventions such as EI

training represent a promising strategy to support nurse well-being and improve healthcare outcomes.

### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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