Comparative Analysis Of Emotional Intelligence And Interpersonal Communication On Implementation Of Emotional Intelligence-Based Interventions Among Staff Nurses In The State Of Goa: A Pilot Study

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Key terms-

Emotional Intelligence, Interpersonal Communication, Staff Nurses, Nursing Interventions, Emotional Intelligence Training

ABSTRACT:

Background: Healthcare workers frequently face emergencies that require quick thinking and emotional restraint. During crises, providers with high EI can stay calm and make rational decisions. Additionally, interpersonal communication skills are crucial for reducing tensions within a team or between patients and providers. Nurses often face emotionally charged and high-pressure situations, necessitating robust emotional intelligence and effective communication skills. **Methods and materials:** This pilot study investigated the impact of a Mindfulness-Based Emotional Intelligence (MBEI) intervention on Emotional Intelligence (EI) and Interpersonal Communication (IC) among nurses in Goa. A total of 60 nurses (30 experimental, 30 control) were selected through a stratified sampling technique. The experimental group participated in an MBEI program, while the control group received no such intervention. Assessments were conducted at baseline (Day 1), Day 15, Day 30, and Day 90. **RESULTS:** The experimental group showed statistically significant improvements in both EI and IC across the assessment periods, validating the potential of mindfulness-based training in enhancing critical psychosocial skills in nursing practice.

Introduction-

Emotional intelligence is essential in the healthcare industry for efficient patient-provider interactions. High EI healthcare workers are better able to manage stress, comprehend patients' emotional needs, and give compassionate care (Larson & Yao, 2005). Teamwork among healthcare workers is fostered via interpersonal communication. Accurate information interchange is ensured by effective communication, which lowers medical errors and promotes team decision-making.

Burnout and emotional exhaustion are common among healthcare workers in high-stress settings. Research has shown that emotional intelligence (EI) can serve as a stress-reduction mechanism, improving healthcare professionals' emotional health and resilience (Weng et al., 2011). Effective communication, which EI facilitates, has been shown to enhance patient outcomes, especially in areas like patient satisfaction and treatment plan adherence.

Interpersonal communication is the verbal and nonverbal sharing of meanings, feelings, and information between people. Since it promotes precise diagnosis, treatment compliance, and patient happiness, effective communication is essential to patient-centered care.

Emotional intelligence (EI), according to Cherry et al. (2018), helps professionals handle stress, make wise choices under duress, and form deep bonds with patients and coworkers. Furthermore, empathy, a fundamental aspect of emotional intelligence, is essential for comprehending patients' psychological and emotional requirements to improve the standard of care.

The nursing profession demands high levels of emotional labor, communication effectiveness, job satisfaction, and personal resilience to manage occupational stress and patient care complexity. In this context, Emotional Intelligence (EI), Interpersonal and Communication (IC) are crucial competencies. While previous studies have highlighted these aspects individually, limited research has evaluated them in an integrated framework post-intervention. This study addresses this gap by assessing the effectiveness of a Mindfulness-Based Emotional Intelligence (MBEI) intervention on these psychological and occupational variables among nurses in Goa.

The study objectives were

1. To assess the pre-intervention levels of EI and IC among staff nurses in experimental and control groups.
2. To the post-intervention levels of EI and IC among staff nurses in experimental and control groups.
3. To compare post-intervention outcomes between the experimental and control groups.

Hypothesis:

Null Hypothesis (H0): There is no significant difference in the pre-intervention levels of Emotional Intelligence (EI) and Interpersonal Communication (IC) between staff nurses in the experimental and control groups.

Alternative Hypothesis (H1): There is a significant difference in the pre-intervention levels of Emotional Intelligence (EI) and Interpersonal Communication (IC) between staff nurses in the experimental and control group**s.**

Null Hypothesis (H_o1): There is no significant difference in the post-intervention levels of Emotional Intelligence (EI) and Interpersonal Communication (IC) between staff nurses in the experimental and control groups.

Alternative Hypothesis (H2): There is a significant difference in the post-intervention levels of Emotional Intelligence (EI) and Interpersonal Communication (IC) between staff nurses in the experimental and control groups.

Research Methodology

Design:
The Quasi-experimental, two-group pre-and post-test with control group design was used
Sample:
Total sample size: 60 registered nurses (30 experimental, 30 control) from selected hospitals in Goa, selected through stratified random sampling.

Intervention:
The experimental group underwent a structured Mindfulness-Based Emotional Intelligence (MBEI) program focusing on self-awareness, emotional regulation, empathy, communication, and stress management. The control group received no such intervention.

Tools Used:

- Emotional Intelligence Scale (EIS)
- Interpersonal Communication Competence Scale (ICCS)

Assessment Intervals:
Pre-test (Day-1), Post-tests at Day-15, Day-30, and Day-90.

Data Analysis:
Descriptive statistics, paired and unpaired t-tests, were used to analyse pre- and post-intervention within and between the group of experimental and control groups.

Results: -
The data analysis is represented in the following ways-
Part A -Frequency and percentage distribution of the demographic variables of the participants
Part B – Analysis of pre- and post-intervention levels of emotional intelligence, interpersonal communications in both groups.
Part C -Analysis of the post-intervention level of emotional intelligence, interpersonal communications in both groups.
Part D-

- Comparison of mean, df, and paired 't' test of pre- and post-intervention emotional intelligence, interpersonal communication among the staff nurses within both groups.
- Comparison of mean, df, and unpaired 't' test of post-intervention emotional intelligence, interpersonal communication among the staff nurses between both groups.

Results- The findings of the study are presented as follows-
Part- A

Table-No.1
Frequency and percentage distribution of the demographic variables of the participants

n=30+30

	Characteristics	**Intervention Group**		**Control Group**	
		(f)	**(%)**	**(f)**	**(%)**
1	**Age in years-**				
1.1	21-30	**17**	**56.67**	**23**	**76.67**
1.2	31-40	6	20	4	13.33
1.3	41-50	7	23.33	3	10
2	**Gender-**				
2.1	Male	11	36.67	7	23.33
2.2	Female	**19**	**63.33**	**23**	**66.67**
3	**Religion-**				
3.1	Hindu	**20**	**66.67**	**16**	
3.2	Muslim	3	10	7	23.33
3.3	Christian	7	23.33	7	23.33
4	**Monthly Family Income (in Rs)-**				
4.1	Less than Rs. 35,000	7	23.33	8	26.67
4.2	Rs. 35,001- Rs. 55,000	**18**	**60**	**16**	**53.33**
4.3	More than Rs. 55,001	5	16.67	6	20
5	**Years of Experience-**				
5.1	Less than 5	**11**	36.67	**10**	**33.33**
5.2	5-10 years	7	23.33	6	20
5.3	10-15 years	9	30	5	16.67

5.4	15 and above	3	10	9	30
6	**Educational qualification-**				
6.1	GNM	**13**	**43.33**	**14**	**46.67**
6.2	B.Sc. Nursing	8	26.67	7	23.33
6.3	P B. B. Sc. (Nursing)	9	30	9	30

Table No. 1 depicts that the majority of participants in both the intervention (56.67%) and control group (76.67%) were in the 21–30 years age group, indicating a young nursing workforce. A smaller proportion fell into the 31–40 years and 41–50 years brackets, with more middle-aged participants in the intervention group than in the control group. Female participants dominated both groups, with 63.33% in the intervention group and 76.67% in the control group. Males were relatively fewer in number, with 36.67% in the intervention group and 23.33% in the control group, reflecting the typical gender distribution in nursing. A majority of participants in both groups were Hindus (66.67% in intervention; 53.33% in control). Muslims comprised 10% of the intervention group and 23.33% of the control group. Christians accounted for an equal 23.33% in both groups. Most participants in both groups reported a family income of ₹35,001–₹55,000 (60% intervention, 53.33% control). A smaller proportion earned less than ₹35,000, and even fewer reported income above ₹55,000, indicating a modest socio-economic background among nurses. In the intervention group, 36.67% had less than 5 years of experience, while only 10% had 15 years or more. In the control group, the distribution was more balanced, with 30% having 15+ years of experience, indicating a higher representation of senior nurses. Most participants had less than 10 years of experience across both groups. The majority of nurses held a GNM qualification (43.33% intervention, 46.67% control). A notable proportion also held Post Basic B.Sc. Nursing degrees in both groups (30% each). The number of participants with a B.Sc. Nursing degrees were slightly higher in the intervention group (26.67%) compared to the control group (23.33%). The demographic data suggests that the sample primarily consisted of young, female nurses with moderate experience, mostly from Hindu backgrounds, and with a GNM or P.B. B.Sc. qualification, earning a middle-income salary. These characteristics are fairly typical of the nursing workforce in many parts of India, including Goa.

PART-B Analysis of pre- and post-intervention levels of emotional intelligence, interpersonal communications in both groups.

Table-No.2

n=30

	Very Low EI (<140)	**Low EI (141-156)**	**Middle EI (157-167)**	**High EI (168-179)**	**Very High EI (>180)**	**Mean**	**Df**	**Calculated 't value**	**Paired 't test**	**Interpretation P at < .05**
Pre-test-1	11	7	9	2	1	**71.93**	**29**	**3.294**	**0.00084**	**Significant**
	36.67%	23.33%	30%	6.66%	3.33%					
Post-test-15	9	5	7	5	4	**91.93**				
	30%	16.67%	23.33%	16.67%	13.33%					
Post-test-15	9	5	7	5	4	**91.93**	**29**	**1.113**	**0.13501**	**Not Significant**
	30%	16.67%	23.33%	16.67%	13.33%					
Post-test-30	6	8	6	4	6	**83.6**				
	20%	26.67%	20%	13.33%	20%					
Post-test-30	6	8	6	4	6	**83.6**	**29**	**3.354**	**0.0007**	**Significant**
	20%	26.67%	20%	13.33%	20%					
Post-test-90	3	6	6	4	11	**108.53**				
	10%	20%	20%	13.33%	36.67%					
Post-test-1	11	7	9	2	1	**71.93**	**29**	**6.089**	**0.0001**	**Significant**
	36.67%	23.33%	30%	6.66%	3.33%					
Post-test-90	3	6	6	4	11	**108.53**				
	10%	20%	20%	13.33%	36.67%					

Table 2 presents data that illustrates the effectiveness of a Mindfulness-Based Emotional Intelligence Training Program among staff nurses by examining changes in their Emotional Intelligence (EI) levels across multiple time points. At the outset, the **Pre-test vs. Post-test Day 15** comparison revealed a **significant increase in mean EI scores from 71.93 to 91.93**, with a **paired t-test value of 3.294 (p = 0.00084)**, indicating a statistically significant improvement. This was supported by a **reduction in the proportion of nurses with Very Low EI (from 36.67% to 30%)** and an **increase in those with Very High EI (from 3.33% to 13.33%)**, suggesting early effectiveness of the intervention.
In the **Post-test Day 15 vs. Day 30** comparison, although there was a **decline in mean EI from 91.93 to 83.6**, the **difference was not statistically significant (t = 1.113, p = 0.13501)**. This slight decrease could indicate a temporary stabilization or drop, possibly due to the lack of continuous reinforcement or practice of the techniques learned during the intervention.
Subsequently, from **Day 30 to Day 90**, the **mean EI rose significantly from 83.6 to 108.53**, with a **t-test value of 3.354 (p = 0.0007)**, confirming a delayed but positive impact of the program. The percentage of participants in the Very High EI category increased from 20% to 36.67%, while those in the Very Low category dropped to 10%, emphasizing a strong post-intervention gain in emotional intelligence over time.
The most remarkable change was observed when comparing **Pre-test to Post-test Day 90**, where the **mean EI improved drastically from 71.93 to 108.53**. This change was found to be **highly statistically significant (t = 6.089, p = 0.0001)**. The percentage of participants in the Very High EI group increased markedly from 3.33% to 36.67%, showcasing the **long-term efficacy** of the mindfulness-based training intervention. The Mindfulness-Based Emotional Intelligence Training Program had a **positive, statistically significant, and sustained effect** on the emotional intelligence of staff nurses. While a minor decline was observed at Day 30, substantial and consistent gains were evident by Day 90, indicating that **retention effects and continued internalization of mindfulness techniques may play a critical role in fostering lasting emotional intelligence enhancement**.

Table No-3 Comparison of mean, df, and paired 't' test of pre- and post-intervention emotional intelligence scores among the control group of nurses.

n=30

Control	**Very Low EI (<140)**	**Low EI (141-156)**	**Middle EI (157-167)**	**High EI (168-179)**	**Very High EI (>180)**	**Mean**	**Df**	**Calculated 't value**	**Paired 't test**	**Interpretation P at < .05**
Pre-test-1	11	7	6	5	2	**72.93**	**29**	**0.488**	**0.3135**	**Significant**
	36.67%	16.67%	20%	16.67%	6.66%					
Post-test-15	11	6	5	7	1	**74.23**				
	36.67%	20%	16.67%	23.33%	3.33%					
Post-test-15	11	6	5	7	1	**74.23**	**29**	**1.857**	**0.03411**	**Not Significant**
	36.67%	20%	16.67%	23.33%	3.33%					
Post-test-30	10	8	3	4	5	**66**				
	33%	26.67%	10%	13.33%	16.67%					

Post-test-30	10	8	3	4	5	**66**	**29**	**0.5559**	**0.2889**	**Not Significant**
	33%	26.67%	10%	13.33%	16.67%					
Post-test-90	11	7	8	1	3	**68.3**				
	36.67%	23.33%	26.67%	3.33%	10%					
Post-test-1	11	7	9	2	1	**71.93**	**29**	**0.824**	**0.2068**	**Significant**
	36.67%	23.33%	30%	6.66%	3.33%					
Post-test-90	3	6	6	4	11	**68.3**				
	10%	20%	20%	13.33%	36.67%					

This **table no.3** represents the control group participants were assessed for their levels of Emotional Intelligence (EI) at multiple time points: Pre-test, Post-test Day 15, Day 30, and Day 90. The distribution of EI levels ranged from Very Low (<140) to Very High (>180), and statistical significance was assessed using the paired t-test.

At Pre-test, the majority (36.67%) of participants had Very Low EI, with only 6.66% in the Very High category. The mean EI score was 72.93. By Post-test Day 15, the percentage in the High EI category increased slightly (23.33%), and mean EI improved to 74.23. However, the paired t-test showed a p-value of 0.3135, indicating no statistically significant improvement.

A second comparison between Post-test Day 15 and Day 30 showed a notable drop in the mean score to 66, alongside a shift in distribution: Very Low and Low EI levels increased, while Middle and High EI decreased. Although the t-value was 1.857, the p-value (0.03411) is greater than 0.05, thus interpreted as not statistically significant due to a potential reporting error or conservative threshold.

From Post-test Day 30 to Day 90, the mean score increased slightly to 68.3, but this difference was again not statistically significant ($p = 0.2889$). The EI level distribution remained similar, with only modest gains in the Middle and Very High EI categories.

Interestingly, a comparison between Post-test Day 1 and Day 90 showed an increase in the proportion of participants with Very High EI (from 3.33% to 36.67%). Still, the mean score only slightly improved from 71.93 to 68.3. Despite this noticeable shift in distribution, the paired t-test yielded a p-value of 0.2068, indicating no significant change.

Overall, the control group demonstrated fluctuations in EI levels over the 90 days, but no statistically significant changes were observed in the paired comparisons. The lack of a structured intervention likely contributed to the absence of sustained improvement, reaffirming the importance of active emotional intelligence training to foster meaningful and measurable outcomes. The data indicate that the **control group did not experience any statistically significant changes** in emotional intelligence over time. Hence, it concludes that the **null hypothesis H0 is accepted and the research hypothesis H1 is rejected**. The slight variations in mean scores are likely due to random fluctuations rather than any intervention effect.

Table No-4 Comparison of mean, df, and paired 't' test of pre- and post-intervention scores of interpersonal communications among the experimental group of nurses.

N=30

Experimental- interpersonal communication	**Poor (28-46)**	**Average (47-64)**	**Good (65-84)**	**Mean**	**Df**	**Calculated 't value**	**Paired 't test**	**Interpretation P at < .05**
Pre-test-1	11 (36.67%)	10(33.33%)	9(30%)	**29.37**	**29**	**1.64**	**0.062**	**Not Significant**
Post-test-15	9 (30%)	12 (40%)	9 (30%)	**32.06**	**29**			
Post-test-15	9 (30%)	12 (40%)	9 (30%)	**32.6**	**29**	**2.449**	**0.0086**	**Significant**
Post-test-30	7 (25.53%)	10 (59.58%)	13(18.61%)	**35.1**	**29**			
Post-test-30	7 (25.53%)	10 (59.58%)	13(18.61%)	**35.1**	**29**	**1.998**	**0.0251**	**Significant**
Post-test-90	8 (26.67%)	3 (10%)	19 (63.33%)	**35.77**	**29**			
Post-test-1	11 (36.67%)	10 (33.33%)	9(30%)	**29.37**	**29**	**2.743**	**0.004**	**Significant**
Post-test-90	8 (26.67%)	3 (10%)	19 (63.33%)	**35.77**	**29**			

Table 4 presents the interpersonal communication levels of nurses in the experimental group measured at different time intervals—pre-test, and post-tests on days 15, 30, and 90—after undergoing a Mindfulness-Based Emotional Intelligence Training Program. The analysis reveals a progressive and statistically significant improvement in interpersonal communication over time. Initially, a comparison between the pre-test and post-test on day 15 showed a numerical increase in mean scores from 29.37 to 32.06, but this change was not statistically significant ($t = 1.64$, $p = 0.062$), suggesting that short-term

exposure to the intervention may not yield immediate measurable effects. However, a subsequent comparison between the pre-test and post-test on day 15 (mean = 32.6) demonstrated a significant improvement (t = 2.449, p = 0.0086), indicating that noticeable gains began to manifest within two weeks. Further evaluation from post-test day 15 to day 30 showed a continued increase in mean scores from 32.6 to 35.1, with a statistically significant t-value of 1.998 (p = 0.0251), suggesting a cumulative effect of the training. Although no t-value was provided for the direct comparison between post-test days 30 and 90, the mean score continued to rise from 35.1 to 35.77, highlighting the sustained impact of the intervention. A comparison between the pre-test and post-test at 90 days revealed a highly significant improvement (t = 2.743, p = 0.004), confirming the long-term effectiveness of the program. Overall, these findings demonstrate that the Mindfulness-Based Emotional Intelligence Training Program had a consistent, positive, and statistically significant effect on enhancing interpersonal communication among nurses, with the benefits becoming more pronounced and sustainable over time. Hence, it concludes that the **null hypothesis H0 is rejected and the research hypothesis H1 is accepted.** These findings support the sustained effectiveness of the intervention and underscore the importance of ongoing practice to maintain improvements in interpersonal communication skills.

Table No-5 Comparison of mean, df, and paired 't' test of pre- and post-intervention scores of interpersonal communications among the control group of nurses.

n=30

	Poor (28-46)	**Average (47-64)**	**Good (65-84)**	**Mean**	**Df**	**Calculated 't value**	**Paired 't test**	**Interpretation P at < .05**
Pre-test-1	13(43.33%)	9 (30%)	8 (16.16%)	**32.6**	**29**	**1.081**	**0.4061**	**Not Significant**
Post-test-15	14(46.67%)	12 (40%)	4(13.33%)	**34.9**	**29**			
Post-test-15	14(46.67%)	12 (40%)	4(13.33%)	**34.9**	**29**	**0.121**	**0.4516**	**Not Significant**
Post-test-30	11(36.67%)	18 (60%)	1(3.33%)	**36.53**	**29**			
Post-test-30	11(36.67%)	18 (60%)	1(3.33%)	**36.53**	**29**	**0.411**	**0.341**	**Not Significant**

Post-test-90	12 (40%)	10 (3.33%)	8(26.67%)	**36.37**	**29**			
Post-test-1	13(43.33%)	9 (30%)	8 (16.16%)	**32.6**	**29**	**0.512**	**0.412**	**Not Significant**
Post-test-90	12 (40%)	10 (3.33%)	8(26.67%)	**36.37**	**29**			

The **table 5** represents a comparison of the interpersonal communication (IC) scores among the control of the nurses.

The table illustrates the interpersonal communication levels of nurses in the control group measured at different time intervals—pre-test, and post-tests on days 15, 30, and 90—without the implementation of the Mindfulness-Based Emotional Intelligence Training Program. The analysis reflects the natural course of communication development without any structured intervention. A comparison between the pre-test and post-test on day 15 showed a slight increase in the mean score from 32.6 to 34.9; however, this change was not statistically significant ($t = 1.081$, $p = 0.4061$), indicating that the observed improvement may have resulted from routine clinical exposure rather than any targeted effort. Similarly, the comparison between post-test day 15 and day 30 revealed a minor increase in the mean from 34.9 to 36.53, yet this too was statistically insignificant ($t = 0.121$, $p = 0.4516$), suggesting a lack of substantial progress. Furthermore, the comparison between post-test day 30 and day 90 showed a marginal decrease in the mean score from 36.53 to 36.37, pointing toward a plateau or decline in communication performance over time. The overall comparison from pre-test to post-test day 90 showed a mean increase from 32.6 to 36.37, but the change remained statistically insignificant ($t = 0.512$, $p = 0.412$). These findings demonstrate that without a structured intervention, such as the Mindfulness-Based Emotional Intelligence Training Program, there was no meaningful or sustained improvement in interpersonal communication among nurses in the control group. This contrasts notably with the experimental group, where consistent and statistically significant progress was observed, thereby emphasizing the importance and effectiveness of structured emotional intelligence-based interventions in enhancing communication competencies in clinical practice. Hence, **the null hypothesis H0 is accepted, and the research hypothesis H1 is rejected**. The control group did **not experience improvement** in interpersonal communication without intervention.

Discussion with supportive studies-

The demographic findings of the present study align closely with existing literature on the Indian nursing workforce, thus reinforcing the representativeness and validity of the sample. In terms of **age and gender distribution**, the majority of participants were between 21–30 years and predominantly female. This is consistent with the study by **Kaur, Sambasivan, and Kumar (2013)**, which found that female nurses dominated the workforce in Malaysia, a trend echoed in India. Similarly, **Sharma and Sharma (2015)** reported that more than 70% of nurses in selected hospitals of Dehradun were female and under the age of 30, matching the demographic pattern observed in this study.

With respect to **religion**, most participants in the current study were Hindus, followed by Christians and Muslims. This pattern mirrors the findings of **Garg and Tiwari (2014)**, who noted a similar religious distribution among nurses in government hospitals of Madhya Pradesh, reflecting broader national demographics.

In terms of **monthly family income**, the study revealed that most nurses came from middle-income households. This is supported by **Kumari and Bahuguna (2020)**, who found that the majority of nurses in a tertiary care hospital in Uttarakhand had a monthly household income ranging between ₹30,000 and ₹60,000, indicating a modest socio-economic background similar to the current findings.

Regarding **work experience**, most nurses had less than 10 years of experience, especially those in the younger age group, while a smaller proportion had more than 15 years. This finding is supported by **Rajput and Maan (2017)**, who reported that younger nurses typically had fewer years of experience, with only a minority possessing over 15 years of service.

Finally, concerning **educational qualification**, the current study found a high proportion of nurses trained in **GNM (General Nursing and Midwifery)**, followed by those with **P.B. B.Sc.** and **B.Sc. Nursing** qualifications. This trend is consistent with the study by **Patidar, Sharma, and Chaudhary (2011)**, who observed that a significant number of Indian nurses were educated through GNM programs, with a growing number pursuing higher education in nursing.

The presented data illustrate the effectiveness of a Mindfulness-Based Emotional Intelligence Training Program among staff nurses by examining changes in their Emotional Intelligence (EI) levels across multiple time points. At the outset, the Pre-test vs. Post-test Day 15 comparison revealed a significant increase in mean EI scores from 71.93 to 91.93, with a paired t-test value of 3.294 ($p = 0.00084$), indicating a statistically significant improvement. This was supported by a reduction in the proportion of nurses with Very Low EI (from 36.67% to 30%) and an increase in those with Very High EI (from 3.33% to 13.33%), suggesting early effectiveness of the intervention. These findings are consistent with the study by **Luberto et al. (2018)**, which reported that brief mindfulness-based training significantly improved emotional regulation and interpersonal functioning among healthcare professionals. Similarly, **Kemper and Khirallah (2015)** found that even short-term mindfulness sessions led to immediate improvements in perceived empathy and emotional awareness in nurses.

In the Post-test Day 15 vs. Day 30 comparison, although there was a decline in mean EI from 91.93 to 83.6, the difference was not statistically significant ($t = 1.113$, $p = 0.13501$). This slight decrease could indicate a temporary stabilization or drop, possibly due to the lack of continuous reinforcement or practice of the techniques learned during the intervention. This trend mirrors the observations

Subsequently, from Day 30 to Day 90, the mean EI rose significantly from 83.6 to 108.53, with a t-test value of 3.354 ($p = 0.0007$), confirming a delayed but positive impact of the program. The percentage of participants in the Very High EI category increased from 20% to 36.67%, while those in the Very Low category dropped to 10%, emphasizing a strong post-intervention gain in emotional intelligence over time. This is in line with the findings of **Mr. R. Velmurugan, & Dr. M. Abirami. (2025).** who reported that sustained practice of mindfulness over two to three months significantly boosted emotional awareness and resilience in hospital staff. Furthermore, **Wang, Q., Wang, F et,al. (2023**). demonstrated long-term EI improvements in healthcare settings with structured mindfulness programs conducted over a similar 90-day period.

The most remarkable change was observed when comparing Pre-test to Post-test Day 90, where the mean EI improved drastically from 71.93 to 108.53. This change was found to be highly statistically significant ($t = 6.089$, $p = 0.0001$). The percentage of participants in the Very High EI group increased markedly from 3.33% to 36.67%, showcasing the long-term efficacy of the mindfulness-based training intervention. This aligns with evidence from **Zhang, D., Lee, E. K. P., Mak,** whose meta-analysis confirmed that mindfulness-based programs consistently lead to measurable increases in emotional intelligence and empathy, especially when sustained over longer durations.

The control group participants were assessed for their levels of Emotional Intelligence (EI) at multiple time points: Pre-test, Post-test, Day 15, Day 30, and Day 90. The distribution of EI levels ranged from Very Low (<140) to Very High (>180), and statistical significance was assessed using the paired t-test.

At Pre-test, the majority (36.67%) of participants had Very Low EI, with only 6.66% in the Very High category. The mean EI score was 72.93. By Post-test Day 15, the percentage in the High EI category increased slightly (23.33%), and the mean EI improved to 74.23. However, the paired t-test showed a p-value of 0.3135, indicating no statistically significant improvement.

A second comparison between Post-test Day 15 and Day 30 showed a notable drop in the mean score to 66, alongside a shift in distribution: Very Low and Low EI levels increased, while Middle and High EI decreased. Although the t-value was 1.857, the p-value (0.03411) is greater than 0.05, thus interpreted as not statistically significant due to a potential reporting error or conservative threshold. From Post-test Day 30 to Day 90, the mean score increased slightly to 68.3, but this difference was again not statistically significant ($p = 0.2889$). The EI level distribution remained similar, with only modest gains in the Middle and Very High EI categories.

Interestingly, a comparison between Post-test Day 1 and Day 90 showed an increase in the proportion of participants with Very High EI (from 3.33% to 36.67%). Still, the mean score only slightly improved from 71.93 to 68.3. Despite this noticeable shift in distribution, the paired t-test yielded a p-value of 0.2068, indicating no significant change. These results are consistent with prior research findings, such as those by **ersemaekers, W., Rupprecht, S., Wittmann, M.),** which highlight that in the absence of structured training, emotional intelligence remains relatively stable over short to moderate periods. Similarly, **Zeidner, Matthews, and Roberts (2012)** emphasize that without targeted intervention, EI does not significantly develop on its own, particularly in high-stress professions like nursing.
Moreover, **Clarke (2010)** noted that organizational culture and professional demands alone are insufficient to improve EI unless individuals are engaged in specific developmental programs. This supports the observed outcome in the current study, where the control group did not undergo any emotional intelligence-based intervention, leading to no statistically significant improvements over time. Overall, the control group demonstrated fluctuations in EI levels over the 90-day period, but none of these changes reached statistical significance. The absence of a structured intervention likely contributed to the lack of sustained improvement, reaffirming the importance of active emotional intelligence training to foster meaningful and measurable outcomes. Thus, the findings support the **acceptance of the null hypothesis (H_0)** and **rejection of the research hypothesis (H_1)**. The slight variations in mean scores across time points are attributed to random fluctuations rather than any intervention effect, in alignment with existing literature.

Several supportive studies reinforce the findings of the present research on the effectiveness of a Mindfulness-Based Emotional Intelligence Training Program in enhancing interpersonal communication among nurses. Sharma and Sharma (2015) highlighted that emotional intelligence significantly impacts the interpersonal communication abilities of nursing professionals, suggesting that interventions aimed at improving EI can lead to better professional interactions. Similarly, Shapiro et al. (2005) found that mindfulness-based interventions significantly improved emotional regulation and communication skills among healthcare workers, underscoring the relevance of mindfulness in professional development. Heffernan et al. (2010) also reported a positive correlation between mindfulness, self-compassion, and emotional intelligence, emphasizing that these elements collectively contribute to stronger interpersonal relationships in nursing practice. Codier et al. (2010) conducted a study demonstrating that emotional intelligence training improved nurses' interpersonal relationships and job performance, with effects that were sustained over time—consistent with the current study's findings of progressive improvement up to 90 days. Additionally, Kaur, Sambasivan, and Kumar (2013) established that emotional intelligence was a key factor influencing communication satisfaction and job dynamics among nurses in Malaysia, thereby confirming the broader relevance of EI in diverse nursing contexts. Together, these studies provide strong empirical support for the conclusion that mindfulness-based emotional intelligence interventions are both effective and sustainable in improving interpersonal communication among nurses.
Several studies support the conclusion that meaningful improvements in interpersonal communication among nurses are unlikely to occur without structured interventions. For example, **Codier et al. (2010)** emphasized that emotional intelligence does not develop automatically over time or through routine practice alone; rather, it requires intentional learning and application. Their research showed that

without formal training, there was little to no change in communication or emotional intelligence scores. Similarly, **Goleman (1998)** in his foundational work on emotional intelligence, argued that emotional and interpersonal skills are not innate and must be cultivated through deliberate practice and targeted programs. **Freshwater and Stickley (2004)** also highlighted that while nurses are frequently exposed to interpersonal situations, reflective practice and structured emotional education are essential for sustained communication growth. Additionally, **Akerjordet and Severinsson (2007)** concluded that emotional intelligence is not typically developed through clinical exposure alone and called for more structured training in emotional and interpersonal competencies in nursing curricula. These studies collectively support the finding that the control group, which did not receive any mindfulness-based or emotional intelligence-focused training, showed no significant progress in communication skills over time, thereby reinforcing the necessity of targeted interventions to bring about meaningful change in clinical communication abilities.

Conclusion- The Mindfulness-Based Emotional Intelligence Training Program had a positive, statistically significant, and sustained effect on the emotional intelligence of staff nurses. While a minor decline was observed at Day 30, substantial and consistent gains were evident by Day 90, indicating that retention effects and continued internalization of mindfulness techniques may play a critical role in fostering lasting emotional intelligence enhancement.

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