

## Original Research Article

# Determining the effect of developmental 'HR nurturing connect' interventions on compassion and empathy in physicians and surgeons

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## ABSTRACT

**Background:** Empathy in healthcare, particularly therapeutic empathy, is vital for understanding and validating patients' emotions, leading to better patient care and outcomes. Despite its benefits, empathy often declines during medical training. While various training programs aim to enhance empathy are designed, there is a need for standardized methods and more qualitative research to address this. Therefore, in the current study, to enhance the combined concept of empathy and compassion, developmental interventions called "HR nurturing connects" (HRNC) were implemented. **Methods:** This two-arm, prospective, randomized study involving 28 doctors. 14 doctors in the intervention group underwent the HRNC training which focused on enhancing empathy and compassion through training modules and constructive feedback. Whereas the control group received no developmental intervention. Evaluation for parameters of empathy and compassion were evaluated by using the cumulative Bhaktivedanta's index of compassion and empathy in physicians and surgeons (BICEPS) score which involved assessments from doctors and 2 nurses, 2 ward clerks working with respective doctors at multiple time points.

**Results:** The intervention significantly increased empathy and compassion ( $p < 0.001$ ) of the doctors randomized in intervention group, with BICEPS scores rising from  $66.51 \pm 3.87$  (baseline) to  $84.12 \pm 7.43$  (12 months). In contrast, the control group showed minimal changes, with scores increasing from  $63.48 \pm 4.56$  (baseline) to  $69.5 \pm 4.87$  (12 months).

**Conclusions:** The 'HRNC' program has proven effective in enhancing empathy, compassion, kindness, and understanding in doctors, resulting in better patient outcomes, an improved workplace environment, and higher overall healthcare quality.

**Keywords:** Empathy, Compassion, Doctors, Training, Kindness, Understanding

## INTRODUCTION

Empathy can be defined in various forms, but in the healthcare setting, there's a growing consensus that it involves therapeutic empathy. This type of empathy requires healthcare professionals, like nurses and surgeons, to think according to the perspective of the patient. By doing so, they can acknowledge and validate the patient's emotions, concerns, and expectations, and respond in a way that shows genuine understanding.<sup>1</sup> In order to understand each patient's unique needs and experiences, emotions like empathy is crucial for

physicians.<sup>2</sup> Empathic medical care offers numerous advantages, including enhanced patient experiences, greater adherence to treatment recommendations, improved clinical outcomes, reduced medical errors and malpractice claims, and increased physician retention.<sup>3</sup>

A lack of empathy is linked to various physical, emotional, and work-related challenges, including depression, burnout, sleep disturbances, and poor concentration, all of which can adversely affect patient care.<sup>4</sup> A systematic review of studies on empathy in medical students and residents found that empathy levels tend to decrease as their years of education and training progress.<sup>5</sup> Previously,

empathy was considered as an inborn trait that could not be taught, but research has shown that this vital human competency is mutable and can be taught to health-care providers. The evidence for patient-rated empathy improvement in physicians has been demonstrated in a randomised clinical trial, a pilot study, and a 1 year follow up study.<sup>3,6,7</sup> Moreover, a large-scale observational study found that introducing communication skills training for physicians led to improved patient satisfaction scores.<sup>8</sup>

The systematic review found that efforts to cultivate empathy among physicians included communication skills training interventions with diverse components, such as didactic sessions on effective communication and empathy, experiential learning opportunities, and workshops aimed at enhancing skills and behaviour.<sup>9</sup> Despite these extensive training programmes, a decline in empathy has been observed among medical students.<sup>10</sup> Research on empathy and compassion in medicine has been predominantly focused on quantitative self-assessment methods, while qualitative approaches being rarely utilized.<sup>11</sup> Furthermore, there is a significant lack of literature exploring the relationship between the three variables: empathy, coping strategies, and compassion fatigue.<sup>12</sup> Another issue with the current literature is the absence of a standardized method or consistent content for training empathy. Providing a detailed description of the methods used to promote empathic care could advance the field by making the evidence more actionable and implementable.<sup>1</sup> The current study would help in designing interventions that may aid doctors in maintaining appropriate levels of empathy and get an insight about adaptive coping strategies to prevent compassion fatigue. Therefore, the objective of this study is to evaluate the impact of the HR department's self-developed nurturing connect program on compassion and empathy in physicians and surgeons. This evaluation was based on the score of Bhaktivedanta's index of compassion and empathy in physicians and surgeons (BICEPS) scale, which is both self-designed and validated by experts.

## METHODS

This study was a two arm, prospective, randomised, single centre study, conducted from January 2023 to January 2024, at Bhaktivedanta Hospital and Research Institute, Thane, India. Post informed consent form, a total of 28 doctors (14 in each intervention and control group) were randomized by computer-based randomisation technique.

Doctors in the interventional group participated in a "HR nurturing connect" program. The first part, "HR nurturing connects," aimed to increase empathy and compassion through self-developed expert-validated training modules. The second part evaluated the program's effectiveness using the expert validated BICEPS scale, with cumulative assessments provided by the doctors themselves and 2 nurses, 2 ward clerks working with the respective doctor.

As part of the HR nurturing connect program, the intervention group received training designed to enhance their empathy and compassion. This training covered a structured method, including steps such as understanding the situation, evaluating the impact of actions, completing the current task, and planning further actions collaboratively. Additionally, the program included sessions on "being assertive, not aggressive," "avoiding prejudgments and jumping to conclusions," and developing competencies like empathetic listening. The training was specifically designed to equip doctors with the skills to handle negative or developmental feedback, which can often be challenging to hear. HR nurturing connects also gathered feedback from clinical and non-clinical team members who work closely with the doctors. HR nurturing connect program is predefined intervention and not dependent on individual feedbacks on individual doctors. The program also facilitated bonding and conciliatory meetings with colleagues from other specialties to promote collaboration for improved patient experiences. Non-clinical and paramedical team members supporting the doctors in the intervention group received role clarity and specific performance expectations. These team members, along with the doctors, were collectively instructed on the importance of demonstrating sensitivity in delicate, personal, and serious patient situations and always respecting patient privacy. Whereas no such training was provided for participants enrolled in control group.

The empathy and compassion of doctors were assessed using the BICEPS scale, a validated 25-item questionnaire designed to evaluate key behavioural and professional dimensions, including patient care, work commitment, interpersonal relationships, work stress, burnout, and doctors' interactions with their colleagues, patient and patients relative. The BICEPS scores was based on cumulative evaluation by the doctors themselves and 2 nurses, 2 ward clerks directly involved with the respective physician. Responses were rated on a scale from 1 (never) to 5 (always), with higher cumulative scores reflecting greater empathy and compassion. Assessments were conducted at multiple intervals baseline, 3 months, 6 months, 9 months, and 12 months to measure the impact of the "HR nurturing connect program" on the empathy and compassion levels of physicians and surgeons over time.

The numeric data and categorical data were summarized by descriptive statistics like, n, mean, frequency count and percentage. Normality test was performed before applying any statistical test. BICEPS score in both the groups was compared through 'Mann-Whitney' test. A p value less than 0.05 was considered statistically significance.

## RESULTS

A total of 28 doctors were randomised in the study with 14 doctors in intervention and control group respectively. A cumulative BICEPS score, which included evaluations

from doctors themselves as well as from 2 nurses and 2 ward clerks, was used in the assessment.

The mean BICEPS scores at various time points in the control group were as follows: 63.48±4.56 at baseline, 62.86±3.65 at 3 months, 66.38±4.30 at 6 months, 68.5±3.17 at 9 months, and 69.5±4.87 at 12 months (Table 2). In contrast, the interventional group showed significantly higher BICEPS scores at each time point ( $p$  value=0.001) with a mean BICEPS score of 66.51±3.87 at baseline, 76.37±6.13 at 3 months, 79.46±6.53 at 6 months,

81.4±7.35 at 9 months, and 84.12±7.43 at 12 months (Table 1).

In the intervention group, there was a percentage increase in BICEPS score from 16.73% at the timepoint of 3 months which further increased significantly to 26.43% at the timepoint of 12 months (Table 1). Whereas in control group the percentage increase of BICEPS score was minimal from 0.73% at the timepoint of 3 months to only 3.16% at the timepoint of 12 months (Table 2).

**Table 1: Comparison of BICEPS score at different time points in intervention group.**

Time points	BICEPS score	MW test	P value	Percentage change
	Mean±SD	Z value		
At baseline	66.51±3.87	-	-	-
At 3 months	76.37±6.13	2.96	0.001	16.73
At 6 months	79.46±6.53	3.52	0.001	19.56
At 9 months	81.4±7.35	3.78	0.001	22.63
At 12 months	84.12±7.43	3.96	0.001	26.43

**Table 2: Comparison of BICEPS at different time points in control group.**

Time points	BICEPS score	MW test	P value	Percentage change
	Mean±SD	Z value		
At baseline	63.48±4.56	-	-	-
At 3 months	62.86±3.65	1.21	0.36	0.73
At 6 months	66.38±4.30	3.15	0.04	1.68
At 9 months	68.5±3.17	3.85	0.03	2.56
At 12 months	69.5±4.87	3.93	0.02	3.16

## DISCUSSION

Empathy and compassion can be developed and enhanced through targeted training interventions.<sup>1</sup> In this study, the "HR nurturing connects" developmental interventions were implemented to enhance the combined concepts of empathy and compassion among doctors. To assess these qualities, cumulative BICEPS scale scores were evaluated, based on assessments by the doctors themselves and 2 head nurses, 2 ward clerks directly working with the respective doctors at various time points. This approach enabled tracking changes in empathy and compassion over time.

Similar to the interventions in the present study, a previous study involving otolaryngology doctors implemented an 8-week training program that focused on specific techniques for managing and regulating both patient and physician emotional responses to enhance doctors' empathy. Quantitative analyses of this study suggested a significant improvement in doctor's empathy which sustained at a 1-year follow-up ( $p$ =0.05).<sup>7</sup> Similarly, in the present study, the HRNC intervention led to a significant improvement in physicians and surgeons' empathy and compassion parameter at each 3-month follow-up interval, with these improvements being sustained at the 1-year follow-up ( $p$  value=0.001) (Table 1).

A previous study conducted utilized a quantitative research method to examine the impact of communication training on physician-expressed empathy, the study found that global empathy scores in the physician training group improved by 37% from baseline to follow-up.<sup>13</sup> Similarly, in the current study, the doctors in intervention group exhibited a higher percentage increase in BICEPS scores over a one-year period, as assessed at 3-month intervals. Specifically, the scores raised progressively from 16.73% at 3 months to 19.56% at 6 months, further increasing to 22.63% at 9 months, and a rise to 26.43% at 12 months (Table 1). In contrast, the control group showed minimal changes in BICEPS score, which increased from 0.73% at 3 months and gradually reaching 3.16% by the 12-month (Table 2). Although the control group also showed a significant increase in these scores at the timepoint of 12th month ( $p$ =0.02) (Table 2), the percentage change in scores was substantially higher in the intervention group compared to the control group (Tables 1 and 2).

A study involving 70 primary care physicians who participated in an 8-week intensive educational program on mindfulness demonstrated a statistically significant improvement in empathy scores, as measured by the Jefferson scale of physician empathy, after each of the three follow-ups ( $p$  value=0.001).<sup>14</sup> Also, a previous study involving an 8-week mindfulness-based stress reduction (MBSR) program for medical residents showed a

significant increase in empathy, (p value of <0.0096) as measured by the Jefferson scale of physician empathy.<sup>15</sup> Similar to the results of the previous study, in the present study, empathy and compassion as assessed by BICEPS scale increased significantly in intervention group at each timepoint (p value=0.001) (Table 1).

In a previous study conducted on larger sample size of 158 medical students who were randomly assigned to either an intervention group or a control group, the intervention group received empathy skills training; the results showed that participants in the intervention group exhibited significantly higher empathy levels compared to those in the control group.<sup>16</sup> Similarly, in the present study the mean BICEPS score of the control group increased minimally from 63.48±4.56 at baseline to 69.5±4.87 at 12 months (Table 2), in comparison to the interventional group the BICEPS score increased maximally from 66.51±3.87 at baseline to 84.12±7.43 at 12 months (Table 1).

### Limitations

This study is subject to few limitations. The study included only 28 doctors, which may limit the generalizability of the findings. A larger sample size would provide more robust evidence of the effectiveness of the HRNC intervention.

### CONCLUSION

The self-developed targeted developmental interventions 'HR nurturing connect program' has shown the potential to enhance empathy, compassion, kindness, and understanding in doctors, leading to improved patient outcomes, stronger interpersonal relationships with colleagues, a better workplace environment, and enhanced overall healthcare quality.

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