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Enhancing Knowledge of Clinical Preceptors Towards Role Modeling Using Online Role Modeling Training

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ABSTRACT

Background: Role models play a significant role in shaping the character and professionalism of nursing students in clinical settings. Strengthening the impact of preceptors requires robust support and collaboration from educational institutions to ensure effective mentorship and professional development.

Purpose: The aim of this study was to carry out role model training for clinical preceptors as an effort to increase knowledge their role as a role model in clinical education.

Methods: This study employed a pre-experimental one group pretest-posttest design. A purposive sampling technique was used to recruit 33 clinical preceptors from six affiliated home-based hospitals. The training was conducted via Zoom and included structured material presentations and small group discussions. Multiple-Choice Questionnaire were administered to participants in before and after the last session of the training. Paired sample t-test were used to analyze the mean differences of preceptors' knowledge before and after the training.

Results: The results showed that the majority of respondents demonstrated a good level of knowledge following the role modeling training, with 22 participants (66.7%) falling into the 'good knowledge' category, while only 1 participant (3.0%) remained in the 'poor knowledge' category. A statistically significant improvement was observed in the knowledge levels before and after the training, as indicated by p-value 0.000 (<0.05).

Conclusion: Online role modeling training is an effective faculty-led initiative that has been proven to enhance clinical preceptors' knowledge and awareness of their role as professional role models in clinical settings.

Keywords: clinical preceptor, knowledge of role model, role modeling training

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BACKGROUND

Role modeling is an effective teaching strategy because it not only supports the student learning process, but also provides opportunities for the preceptor to demonstrate clinical skills, knowledge, and professional attitudes directly. This approach focuses on providing examples of safe, evidence-based, and patient-centered care practices. As part of the hidden curriculum in clinical teaching and learning, role modeling provides opportunities for students to observe and imitate the behaviors and skills learned. This process helps build self-efficacy, increases self-confidence, and supports the mastery of those skills (Eka et al., 2024; Kurt et al., 2024).

Role modeling has been proven to contribute to the development of students' character, emotional intelligence, and professionalism. This is often implicitly demonstrated through the application of professional values in a variety of clinical settings, with the awareness that students pay attention to and learn the actions taken by their role models (Fong & Jones, 2024). Preceptors can design role modeling sessions that allow novice nurses or college students to observe frequently performed skills or procedures, while guiding them in integrating theoretical knowledge into clinical practice. In this process, the preceptor also plays a role in teaching practical nursing skills and helping students improve their problem-solving and critical thinking skills that are essential for professional nursing practice (Alkhelaiwi et al., 2024; Kerr et al., 2021).

Poor role models are challenges faced by students during clinical practice, such as showing poor communication skills, being rude to patients and students, being unprofessional, ignoring the welfare of patients and students, not providing guidance, and engaging in practices that are not in accordance with the rules. Many healthcare staff carry out this role without adequate preparation. One of the main challenges in developing and implementing a preceptor development program is the lack of evidence-based preceptor competencies (Douglas et al., 2021; Mathe et al., 2021; Harper et al., 2021; Warren et al., 2023).

The lack of institutional support and weak regulatory oversight are also obstacles in creating an ideal role model. Students also observed inconsistencies in role modeling shown by professional nurses in various departments. This is due to differences in professional, cultural, and practical attributes, which can have a positive impact such as increasing motivation and confidence, but can also trigger confusion, frustration, despair, as well as various other negative conditions (Bashir & Mctaggart, 2022; Mathe et al., 2021).The role models chosen by nursing students will influence their behavior and the way they understand working with others in a variety of situations (Panda et al., 2021).

Previous research has recommended several strategies to develop role modeling in professional nurses, such as organizing mentorship training, inviting role models to share inspirational experiences, holding workshops, and creating and promoting a positive learning environment (Bashir & Mctaggart, 2022; Mathe et al., 2021). Therefore, this research aims to increase the knowledge and awareness of preceptor about their role as role models in clinical education through role modeling training, so that it is expected to create quality role models for nursing students.

OBJECTIVE

The aim of this study was to enhancing knowledge of clinical preceptors through online role modeling training.

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METHODS

This study received ethical approval from the Faculty of Medicine, Universitas Muhammadiyah Yogyakarta (Approval No. 233/EC-KEPK FKIK UMY/VII/2023). Informed consent was obtained from all participants, and confidentiality was strictly maintained in accordance with the principles outlined in the Declaration of Helsinki.

This study employed a pre-experimental one group pre-posttest design. A total of 33 clinical preceptors were selected through purposive sampling. The inclusion criteria were as follows: (1) clinical preceptors with a minimum of one year of experience supervising nursing students; (2) willingness to participate in the study; (3) full participation in the role modeling training program; and (4) completion of both pre- and posttest questionnaires.

The research instrument used was a Multiple Choice Questions questionnaire consisting of ten items assessing knowledge related to role modeling, aligned with the content of the training program. The questionnaire underwent content validation by three experts using the Content Validity Index (CVI), yielding a strong validity result (S-CVI = 0.9).

The training was conducted online for one full day via Zoom. The session began with a pre-test to assess participants' baseline knowledge. Following this, respondents were divided into small groups to discuss case studies and share personal experiences related to their roles as clinical role models. These small-group activities were designed to foster reflective thinking among the preceptors regarding their role in clinical education. Each group was guided by a facilitator who supported the reflection and discussion process.

After the group discussions, expert speakers delivered the core training material, providing evidence-based insights into effective role modeling in clinical settings. A Q&A session followed, allowing participants to deepen their understanding through direct interaction with the experts. The training concluded with a post-test to evaluate knowledge improvement after the entire training program.

Data analysis was conducted using both univariate and bivariate methods. Univariate analysis was used to describe the frequency distribution of respondent characteristics, as well as the minimum and maximum knowledge scores before and after the training, and to categorize the level of knowledge. Bivariate analysis, specifically the paired sample t-test, was employed to examine differences in average knowledge scores before and after the training. A normality test was conducted beforehand, confirming the data met the assumption of normal distribution ($p > 0.05$).

RESULTS

Characteristics of Respondent

Table 1. Frequency Distribution of Respondent Characteristics (N=33)

Characteristic	N	%
Gender		
1) Man	16	48.5%
2) Woman	17	51.5%
Preceptor Age		
1) 30-40 Years	9	27.3%
2) 41-50 Years	16	48.5%
3) 51-60 Years	8	24.2%

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Length of Work			
1)	1-5 Years	2	6.1%
2)	6-10 Years	13	39.4%
3)	>15 Years	18	54.5%
Long Time as a Clinic Supervisor			
1)	1-5 Years	16	48.5%
2)	6-10 Years	12	36.4%
3)	11-15 Years	2	6.1%
4)	>15 Years	3	9.1%

The study involved 33 clinical preceptors with a nearly equal gender distribution: 48.5% men and 51.5% women, reflecting the growing diversity within the nursing profession where both male and female preceptors play vital roles in mentoring nursing students (Ramasamy, 2013; McLaughlin et al., 2010). The majority of participants were aged between 41 and 50 years (48.5%), followed by 30–40 years (27.3%) and 51–60 years (24.2%), indicating that most preceptors were in the mid-career phase, a stage associated with substantial clinical experience and developed reflective teaching skills (Myrick & Yonge, 2005).

In terms of overall work experience, over half (54.5%) had more than 15 years in nursing practice, while 39.4% had between 6 and 10 years, and a small minority (6.1%) had 1 to 5 years. This extensive professional experience aligns with literature emphasizing that seasoned nurses tend to demonstrate advanced clinical reasoning and leadership abilities, which are critical for effective mentorship (Benner, 1984; Duchscher, 2008).

Regarding tenure as clinical supervisors, nearly half of the respondents (48.5%) had served in this role for 1 to 5 years, 36.4% for 6 to 10 years, with fewer having 11 to 15 years (6.1%) or more than 15 years (9.1%). Although a majority had relatively recent supervisory experience, previous studies suggest that with proper training and reflective practice, even those newer to preceptorship can provide effective clinical education (Myrick & Barrett, 1994).

Collectively, these demographic and professional characteristics indicate a well-qualified cohort of clinical preceptors, well-positioned to benefit from and contribute to role modeling interventions aimed at enhancing clinical education.

Table 2. Distribution of Frequency of Minimum, Maximum, and Average Knowledge Scores Before and After Role Modeling Training (N= 33)

Knowledge	Minimum Score	Maximum Score	Mean
Before training	20	90	53.94
After training	40	100	80.30

Table 2 displays the distribution of minimum, maximum, and average knowledge scores of the clinical preceptors before and after the role modeling training. Prior to the intervention, participants' knowledge scores ranged from a minimum of 20 to a maximum of 90, with a mean score of 53.94. This indicates a moderate baseline level of knowledge among the preceptors, with some variability likely reflecting differences in prior exposure to role modeling concepts and clinical teaching experience. Following the training, knowledge scores improved significantly, with the minimum score rising to 40 and the maximum reaching a perfect score of 100. The mean knowledge score increased markedly to 80.30,

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demonstrating a substantial enhancement in understanding of the role model concept as a result of the training program.

The increase in both minimum and mean scores suggests that the training was effective not only in raising the overall knowledge level but also in elevating the lower-performing participants, reducing knowledge gaps across the cohort. These findings are consistent with previous research indicating that structured educational interventions, especially those incorporating interactive components like case discussions and expert presentations, can significantly improve clinical educators' knowledge and teaching competencies (Cook et al., 2008; Duffy, 2013). The broadening of the maximum score to 100 post-training reflects the attainment of full comprehension by some participants, which highlights the potential of online role modeling training to foster mastery of critical teaching skills even in a remote learning environment.

Overall, the results affirm the value of targeted training programs in enhancing the preparedness of clinical preceptors to serve as effective role models, which is essential for fostering professionalism and competence in nursing students (Myrick & Yonge, 2005).

Table 3. Frequency Distribution of Knowledge Levels Before and After Role Modeling Training

Level of Knowledge	Before		After	
	N	%	N	%
Less	12	36.4%	1	3.0%
Enough	15	45.5%	10	30.3%
Good	6	18.2%	22	66.7%
Total	33	100%	33	100%

Table 3 shown that the majority of respondents' knowledge level before the role modeling training was in the category of sufficient as 15 (45.5%) respondents, followed by insufficient knowledge as many as 12 (36.4%) respondents, and good knowledge as many as 6 (18.2%) respondents. Meanwhile, after the role modeling training was carried out, the majority of respondents were at a good knowledge level of 22 (66.7%), followed by sufficient knowledge as much as 10 (30.3%), and insufficient knowledge of only 1 (3.0%) respondents.

Table 4. Difference in Average Level of Knowledge Before and After Role Modeling Training

Knowledge	Mean	Std. Deviation	P-Value
Before Role Modeling Training	53.94	20.606	0.000
After Role Modeling Training	80.30	19.119	
Before-After Role Modeling Training	-26.364	20.889	

Table 4 illustrates the difference in average knowledge levels of clinical preceptors before and after the role modeling training. The mean knowledge score prior to the intervention was 53.94 (SD = 20.606), indicating a moderate understanding of role modeling concepts among participants. Following the training, the mean knowledge score increased significantly to 80.30 (SD = 19.119). The mean difference between the pre- and post-training

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scores was -26.364 (SD = 20.889), with a p-value of 0.000, indicating a statistically significant improvement in knowledge at the 0.05 significance level.

This significant difference suggests that the training intervention had a strong positive effect on participants' knowledge regarding their roles as clinical role models. The large mean difference reflects not only improved comprehension but also increased awareness and readiness to apply role modeling principles in clinical education. These findings are consistent with prior studies demonstrating the effectiveness of structured educational programs in enhancing the competencies of clinical preceptors (Cook et al., 2008; Myrick & Yonge, 2005).

The use of interactive learning methods, such as small-group discussions and case-based learning, likely contributed to this outcome by promoting active reflection and experiential learning—key components of adult learning theory (Knowles, Holton, & Swanson, 2014; Kolb, 1984). Moreover, the significant p-value underscores the reliability of the training's impact, confirming that the observed improvements were not due to chance.
The role modeling training program proved to be a highly effective intervention for increasing clinical preceptors' knowledge, reinforcing the importance of continued professional development initiatives in nursing education.

DISCUSSION

Recognizing the importance of role models in complex clinical settings is critical to improving the quality of nursing education. In high-pressure environments, clinical preceptors are expected to not only demonstrate advanced clinical skills but also consistently model professional behavior. The ability of a role model to effectively influence students, however, is shaped by various factors, including the clinical context, teaching approach, and the preceptor's personal and professional attributes (King et al., 2021). In response to this need, the present study implemented a structured training program comprising public lectures and case-based small group discussions to strengthen clinical preceptors' role modeling capabilities.

The results showed that although most clinical preceptors had extensive work experience—over 15 years for the majority—many had only 1 to 5 years of experience as clinical supervisors. This highlights a critical gap: professional experience alone does not necessarily translate into proficiency as an educator or role model. Supervisory skills and an understanding of pedagogical principles require specific training and development. Previous research supports this view, emphasizing that nursing clinical supervisors must demonstrate consistent knowledge, attitudes, and teaching abilities throughout their mentorship role (Javornická et al., 2024).

An effective role model is typically characterized by excellence across three domains: personal-interpersonal attributes, teaching ability, and clinical expertise. Personal and interpersonal skills include a positive attitude, compassion, integrity, a growth mindset, loyalty, and intellectual curiosity (Graham et al., 2023). These traits not only reflect the individual's character but also underpin their teaching effectiveness. Strong teaching skills involve the ability to create interactive, student-centered learning environments, facilitate reflective learning, promote collaboration, foster critical and creative thinking, and deliver constructive feedback. These skills are essential in building meaningful student-preceptor relationships and supporting student development.

In terms of clinical skills, a strong role model demonstrates competence, confidence, and accountability, especially in complex and unpredictable clinical situations. They act as patient advocates and uphold high standards of safety and ethical practice. Preceptors who

model such behaviors play a pivotal role in shaping students' professional identity and attitudes. The significant improvement in knowledge scores observed in this study after the training intervention confirms the effectiveness of structured role modeling programs. This aligns with prior research showing that post-training, preceptors reported greater understanding of their role and enhanced awareness of their influence on students (Sternszus et al., 2018).

To foster a deeper understanding of the role model's impact, faculties can implement various strategies, such as public lectures, clinical mentoring, and theoretical modules on role modeling. Experiential learning approaches, including workshops, critical reflection sessions, and the provision of explicit frameworks describing the characteristics of effective role models, are also recommended. These initiatives can broaden clinicians' perspectives and enhance their capabilities as educators. Innovative instructional strategies such as flipped-classroom models and simulation-based education have been shown to be effective in improving knowledge, attitudes, and self-perception regarding role modeling (Özbay & Çınar, 2021; Ruslan et al., 2022).

Moreover, these methods support the development of teaching and professional skills not only among students but also at the faculty level. Integrating simulation and reflective practice into faculty development programs enhances educators' ability to deliver humanistic, student-centered teaching (Ruslan et al., 2022). Comprehensive faculty development initiatives that include experiential learning, critical reflection, and effective feedback mechanisms are essential for cultivating positive role models in clinical education. Evidence suggests that such programs contribute to improved professional behavior, teaching performance, and role modeling (Barranquero-Herbosa et al., 2022; Kaplan et al., 2023).

One important element of faculty development is training for clinical educators. Previous studies have shown that training programs typically involving experienced educators, group discussions, role plays, and reflection exercises can significantly enhance educators' self-confidence and perceived competence (Tamsah et al., 2021). The training design used in the current study mirrors this model, combining small group discussions with reflective activities focused on the preceptors' role as educators and professional exemplars.

In addition to content, the duration and format of training are critical to its success. Research has shown that shorter, focused training sessions are often easier to digest and more effective than longer, less structured programs (Tamsah et al., 2021). The success of training interventions also depends heavily on curriculum quality and implementation methods. Ensuring alignment between educational content and practical teaching needs enhances the training's impact on clinical teaching performance and professionalism.

Clinical preceptors play an essential role in supporting nursing students' learning by creating positive clinical learning environments and modeling professional behavior. It is imperative that clinical preceptors understand not only their responsibilities but also the qualities that define an effective role model (Graham et al., 2023). Increasing awareness of these attributes, through structured training and reflective practice, can help preceptors enhance their teaching effectiveness and contribute meaningfully to the development of future nursing professionals. As Mohammadi et al. (2020) emphasize, understanding the influence of role models is key to improving one's ability to serve as an exemplary guide for students in clinical settings.

CONCLUSION

Role modeling training has been demonstrated to effectively enhance clinical preceptors' knowledge and awareness regarding their critical role as exemplars in clinical

education. By utilizing interactive methods such as small group discussions, the training facilitates a deeper understanding of role modeling principles, emphasizing the significance of consistently exhibiting professional behaviors that nursing students can observe and emulate. Beyond strengthening preceptors' individual competencies, this program plays a vital role in elevating the overall quality of clinical education by fostering a supportive learning environment conducive to the development of students into competent and professional healthcare practitioners. Therefore, it is recommended that Faculties of Health implement this training as a mandatory and ongoing component of professional development for clinical educators. Additionally, further research is encouraged to explore diverse approaches to role modeling training, aiming to optimize its effectiveness across varied clinical and educational settings.

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CONFLICTS OF INTEREST

The authors do not have any conflict of interest.

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