

Orthodontic Residents' Mentorship: Perceptions, Experiences, and Programmatic Implications in Nigeria

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ABSTRACT

Objectives: Mentoring is an essential aspect of dental education, particularly in specialized fields like orthodontics that require complex clinical decision-making. Effective mentorship enables orthodontic residents to receive more comprehensive training, thereby enhancing their professional productivity. This study evaluated mentorship among Nigerian orthodontic residents.

Methods: A cross-sectional study was conducted using a semi-structured 17-item Google form questionnaire. Information regarding sociodemographics, perception of mentoring, and experiences during training was collected. Data were analyzed using descriptive (frequencies and proportions) and inferential (chi-square) statistical methods. The significance level was set at $P < 0.05$.

Results: The study involved 20 females and 17 males, with a mean age of 38.22 ± 6.77 years, most in the 36–45 years age range. Nearly all respondents (35, 94.6%) expressed interest in being mentored, and the majority (27, 73.0%) had previously received mentoring. Most (33, 89.2%) believed that mentoring is important, while 28 (75.7%) reported that mentoring enhanced their confidence and skills. Fewer than half (15, 40.5%) felt the mentoring they received was inadequate, and 16 (43.2%) thought the quality of mentorship during orthodontic posting was good. Seventeen (45.9%) and 14 (37.8%) agreed that mentorship aided their clinical practice and research pursuits, respectively. Perceived impacts on research, clinical practice, and skills showed no statistically significant gender-based differences.

Conclusions: Mentorship is desired by Nigerian orthodontic residents and should be encouraged, as it could be an important tool to improve residents' practice confidence and clinical skills.

Keywords: Mentoring, confidence, medical education, orthodontic residents, research interest

INTRODUCTION

Mentoring can be defined as a reciprocal relationship between an experienced individual, known as a mentor, and a less experienced person, called a mentee. The relationship may be formal or informal, providing the mentee with guidance on personal and professional development by encouraging reflection and learning of decision-making skills.¹ The act of mentoring in academia has become a global tool for the sustainability and improvement of higher education.² Mentoring can be either structured or unstructured; it may follow a dyadic model involving one mentor to one mentee, or a Socratic model, whereby a mentor guides a group of mentees. It can also be peer mentoring among contemporaries.³ Several attributes and skills of a mentor include, but are not limited to, expertise, professionalism, integrity, honesty, accessibility, approachability, and facilitation.⁴ Mentee qualities are equally important and include being proactive, committed, eager to learn, enthusiastic, open-minded, and communicative.⁵ Discussions have been held previously on how mentors and mentees are aligned, including approaches such as assignment-based matching and mentee-led selection.⁵ Orthodontic residency training in Nigeria is a postgraduate medical program of a minimum duration of six years. Presently, there are seven centers in Nigeria where orthodontic residents can be trained.

Professionalism involves not only acquiring knowledge and skills but also engaging in professional socialization and developing a professional identity and behavior.⁴ Internationally, mentorship has been used in professional education and training, as well as to support new employees during their introduction to the labor market.⁶ From the Scandinavian perspective, it is described or seen as a process that occurs between a professionally active person and a student or trainee.⁶ In the USA, it was revealed that neither the mentor nor the mentee experienced mentorship as focused on the mentee's professional knowledge, but rather as an emotional support function.⁷ Formal mentoring involves pairing mentors and mentees who can adapt easily to each other.⁸ For this matching process to work well, there must be compatibility or chemistry between the mentor and mentee. A previous Nigerian study among orthodontic trainers highlighted the importance of "chemistry" in a mentorship relationship, emphasizing that it cannot be overemphasized.⁹ Some Nigerian studies^{10,11} observed that 7 out of 10 resident doctors preferred to choose their mentor rather than being assigned one; a similar observation was made by Adeoti et al.¹²

Mentoring is important in medicine since it has been found to provide career guidance, counseling, psychosocial support, friendship, career improvement, and development of clinical skills.¹³⁻¹⁷ It has been reported to enhance interest in less attractive

medical specialties and subspecialties. Mentoring bridges hierarchy gaps, enables handling of sensitive issues and challenges, and creates a stress-free environment for professional and personal development. Mentorship increases job satisfaction and facilitates better and safer clinical care for patients.¹³⁻¹⁷ It has been reported that formal mentoring is not common in Africa.¹³ Few studies have reported mentoring in Nigerian postgraduate medical education, and it is the unstructured form that is widely practiced, which may not be very satisfactory.^{10,18} A systematic review of mentorship found that it could not conclusively identify one form of mentorship as more effective than the other;¹⁹ some forms of mentorship (formal, informal) were mentioned earlier. It was found that, although mentorship practices in Nigerian universities are mainly informal, they have a significant effect on the professional development of lecturers.²⁰ While mentorship is recognized as an essential component of professional development worldwide, its implementation in Nigeria varies across different institutions or systems.²¹

Although mentorship has been studied in medical and general dental training, data on orthodontic residents in Nigeria are scarce. Mentoring requires a significant investment of time and effort from the mentor.²² This investment of time in residents by their mentors is necessary for effective training in a specialized field like orthodontics. There is limited empirical evidence on how orthodontic residents in Nigeria experience mentorship, what they perceive as its strengths and gaps, and how these influence their professional development. This study therefore aimed to evaluate orthodontic residents' perceptions of the availability, structure, and quality of mentorship in accredited programs.

METHODS

Study Design: A cross-sectional survey was conducted among all orthodontic residents in accredited postgraduate residency training centers in Nigeria over a 6-month period (April – September 2025).

Setting: Nigeria has seven accredited centers for orthodontic residency training, distributed across the country's six geopolitical zones. These centers are tertiary hospital-based training institutions affiliated with various universities. The survey was conducted electronically, with participants completing the questionnaire at their convenience during the study period.

Participants: All orthodontic residents enrolled in accredited postgraduate training programs in Nigeria during the study period were eligible for inclusion. Residents who were not primarily in orthodontics (e.g., those rotating from other specialties) were excluded from the study. A census sampling approach was employed, inviting all 53 orthodontic residents in the country to participate. This total population sampling method was chosen to obtain the most comprehensive representation of orthodontic residents' perspectives.

Variables: The primary outcomes were residents' perceptions of mentorship and their experiences during training. Predictor variables included sociodemographic characteristics (age, gender, cadre of training), mentorship history (previous mentoring, current mentorship status), and training-related factors (year of training, training center). Mentorship was defined as a reciprocal relationship between an experienced individual (mentor) and a less experienced person (mentee) providing guidance on personal and professional development.

Data Sources and Measurement: The study employed a semi-structured, 17-item questionnaire adapted from a previously validated mentorship instrument by Bhatnagar et al.²³ The modifications involved adjusting questions to focus specifically on orthodontics training in Nigeria. The questionnaire comprised four sections:

1. Sociodemographic characteristics (age, gender, cadre, training center)
2. Mentorship history and current mentorship status
3. Perceptions of mentoring importance and impact
4. Experiences with mentorship during training, including quality and adequacy

The instrument was pre-tested among a small group of dental residents not included in the final study to ensure clarity and comprehensibility. Data were collected using a Google form sent to participants via email and messaging platforms commonly used by orthodontic residents.

Bias: To minimize selection bias, all eligible orthodontic residents were invited to participate, regardless of training center, year of training, or demographic characteristics. The use of an electronic, self-administered questionnaire reduced interviewer bias. Participants were assured of confidentiality and anonymity to encourage honest responses and reduce social desirability bias. The questionnaire was standardized with clear instructions to ensure consistent interpretation across participants.

Study Size: A census approach was adopted, inviting all orthodontic residents in accredited Nigerian training centers (N=53) to participate. No formal sample size calculation was performed, as the study aimed to include the entire population of orthodontic

residents during the study period. This approach ensures maximum representativeness within the target population.

Quantitative Variables: Continuous variables (age) were presented as mean \pm standard deviation. Categorical variables (gender, cadre, mentorship status, perceptions) were summarized as frequencies and percentages. Age was categorized into groups (26–35, 36–45, 46–55 years) for descriptive analysis. Mentorship perceptions were assessed using Likert-scale responses, which were collapsed into binary categories where appropriate for chi-square analysis.

Statistical Methods: Data obtained were analyzed using IBM SPSS version 26 (IBM Corp., Armonk, NY). Descriptive statistics were computed for all variables, with frequencies and percentages presented for categorical variables and mean \pm standard deviation for age. The chi-square test was used to examine associations between categorical variables, including gender-based differences in mentorship perceptions and experiences. The significance level for all statistical tests was set at $P < 0.05$. There were no missing data for any variable, as the Google form was configured to require responses for all items before submission. No subgroup analyses or sensitivity analyses were planned a priori; however, gender-based comparisons were conducted as an exploratory analysis given the near-equal gender distribution.

Ethical Considerations: Ethical clearance for the study was obtained from the Ethics and Research Committee of the University of Port Harcourt Teaching Hospital (UPTH/ADM/90/S.11/VOL.XI/1842). To establish consent to participate, residents were required to tick the consent check box before proceeding to fill out the questionnaire. Participants were informed of the voluntary nature of participation, confidentiality of responses, and their right to withdraw at any time without consequence. No personally identifiable information was collected, and all data were stored securely on password-protected devices.

RESULTS

Sociodemographics: The study had 37 respondents, comprising 20 females and 17 males. The respondents had a mean age of 38.22 ± 6.77 years. Respondents in the 36–45 years age group were more numerous (17, 45.9%); most were Senior Registrars (23, 62.2%) (Table 1).

Thirty-seven orthodontic residents responded to the Google form questionnaire out of 53 orthodontic residents in all training centers at the time of the study, yielding a response rate of 70%.

Table 1: Socio-Demographic Characteristics of Orthodontic Residents in Nigeria

Variables	Frequency (n=37)	Percentage
Age at last birthday		
26–35 years	15	40.5
36–45 years	17	45.9
46–55 years	5	13.5
Mean age 38.22 ± 6.77 years		
Gender		
Female	20	54.1
Male	17	45.9
Cadre of Doctors		
Registrar	14	37.8
Senior Registrar	23	62.2

Mentorship as it relates to Nigerian orthodontic residents: Most respondents (35, 94.6%) expressed a desire to be mentored, and a majority (27, 73.0%) had previously received mentoring. More than half reported being mentored during their training, with about half indicating they had no mentors at the time of the study (Table 2).

Table 2: Mentorship as it Relates to Nigerian Orthodontic Residents

Variables	Frequency (n=37)	Percentage
Do you wish to be mentored?		
No	2	5.4
Yes	35	94.6
Have you ever been mentored?		
No	10	27.0
Yes	27	73.0
Do you presently have a mentor?		
No	19	51.4
Yes	18	48.6
Were you mentored during your training?		
No	14	37.8
Not sure	4	10.8
Yes	19	51.4

Perception of mentorship by orthodontic residents in Nigeria: Most respondents (33, 89.2%) thought mentoring is important, with fourteen (37.8%) reporting mentoring aids guidance and avoidance of mistakes; nine (24.3%) reported it builds confidence, skills, and efficacy in practice; while five (13.5%) each felt mentoring enhances clinical and academic knowledge and speeds up learning and fast growth, respectively. The majority of respondents (28, 75.7%) equally stated that mentoring improved their confidence and skills. Less than half (15, 40.5%) felt the mentoring received was not enough, while more than a third (14, 37.8%) felt the mentorship received was the right amount. Regarding quality of mentorship received during orthodontic posting based on the views of respondents, less than half (16, 43.2%) felt it was good, and only four (10.8%) felt it was very good. Less than half, 14 (37.8%) and 17 (45.9%) of respondents agreed that the amount of mentorship received during orthodontic training helped them in their research interest and clinical practice, respectively. Regarding the relationship between trainees and trainers, a third (12, 32.4%) of respondents described it as bad, while seven (18.9%) and two (5.4%) described it as good and very good, respectively (Table 3).

Table 3: Perception of Mentorship by Orthodontic Residents in Nigeria

Variables	Frequency	Percentage
Do you think mentoring is important?		
No	1	2.7
Not sure	3	8.1
Yes	33	89.2
Perceived importance of mentoring		
Guidance and avoidance of mistakes	14	37.8
Enhance clinical and academic knowledge	5	13.5
Building confidence, skills, and efficacy in practice	9	24.3
Speed up learning and fast growth	5	13.5
Not applicable	4	10.8
Did being mentored improve your confidence?		
No	6	16.2
Yes	28	75.7
Not applicable	3	8.1
Did mentoring improve your skills?		
No	5	13.5
Yes	28	75.7
Not applicable	4	10.8
Rate the mentoring you received		
Right amount	14	37.8
Not enough	15	40.5
Not sure	6	16.2
Not applicable	2	5.4

Quality of mentorship received during orthodontic residency		
Very good	4	10.8
Good	16	43.2
Neutral	12	32.4
Bad	2	5.4
Very bad	1	2.7
Not applicable	2	5.4
The degree of mentorship received during my orthodontic rotation helped me in my research interest		
Strongly agree	4	10.8
Agree	14	37.8
Neither	12	32.4
Disagree	5	13.5
Not applicable	2	5.4
The degree of mentorship received during orthodontic training helped me in my clinical practice		
Strongly agree	8	21.6
Agree	17	45.9
Neither	6	16.2
Disagree	3	8.1
Not applicable	3	8.1
The degree of mentorship received during orthodontic training helped me in my clinical skills		
Strongly agree	11	29.7
Agree	15	40.5
Neither	5	13.5
Disagree	3	8.1
Not applicable	3	8.1
How will you describe the relationship between you and your mentor?		
Very good	2	5.4
Good	7	18.9
Neutral	12	32.4
Bad	12	32.4
Very bad	1	2.7
Not applicable	3	8.1

DISCUSSION

Findings: This survey revealed that most orthodontic residents had been mentored, though through informal mentoring interactions. The average age of respondents indicates they were adults. The adult age found in this study shows respondents had a good understanding of what their training entailed and the areas with which they were satisfied or dissatisfied. This aligns with findings from earlier Nigerian studies²⁴ among pediatric residents and another study¹¹ involving Nigerian residents from different specialties, where more than half of the participants were aged 33 years or older. Most respondents in this study expressed a desire for mentorship, consistent with earlier reports in Nigeria, where nearly all residents without mentors wished they had one.^{11,18,24}

Although most participants recognized the importance of mentoring, only about half actually had mentors at the time of the study. This aligns with findings from previous Ghanaian,¹³ UK,²⁵ and Canadian²⁶ studies on resident doctors and postgraduate trainees. The lower number of mentored residents in this study may be because mentorship is a passive, integral part of residency that is not made mandatory but encouraged within the program. Additionally, mentorship practices vary across training centers in the country.

The importance of mentoring as perceived by respondents in this research mirrors earlier studies,^{14,27} where both mentored and non-mentored trainees agreed on its significance and viewed it as a vital part of training. Despite recognizing its value, less than half of the residents felt their mentorship was insufficient. This contrasts with a previous study²³ where over half of the participants reported inadequate mentorship. The difference could reflect variations in study populations, as this one focused on resident doctors, while Bhatnagar et al.²³ involved medical students. This study showed that little time was given by mentors to mentees,

which is concerning since time is an important factor in successful mentoring.^{14,28,29} Over a third believed mentorship helped guide them during residency and prevent mistakes, an essential aspect since guidance can prevent costly errors, especially when human lives are involved. A systematic review¹⁹ on mentoring supports this, indicating that mentoring significantly influences career guidance, career choice, and personal development.

Most respondents also reported that mentoring helped improve their confidence and skills, consistent with a previous study²² among psychiatric residents in America, where most participants reported similar benefits, and aligned with other research.³⁰ This study confirms that mentoring can enhance confidence and job satisfaction, as found in Davey et al.,³¹ and improve workplace relationships, as previously studied in physicians.^{31,32} It is encouraging that participants felt more confident through mentoring, as this can lead to increased productivity. Additionally, mentorship positively affected research interests, supporting findings by Sambunjak et al.,¹⁹ which stated that mentoring fosters research productivity, including publications and grants, and an African study showed that mentorship enhances productivity and research output.³³ This is promising because some residents pursue academia as lecturers, and research support can enrich their careers, especially since their interests develop early during training. The finding, however, contrasts with a previous study on academic hospitalists, which observed that many lacked mentorship, limiting scholarly output.^{24,32}

Another valuable aspect of mentoring uncovered in this study was its role in improving clinical skills and practice, aligning with reports from previous studies.^{13-17,33-35} A Nigerian study on healthcare workers previously suggested that the number of skilled healthcare professionals increases when they are mentored, corroborating similar findings in the current research.^{34,36} This study had a higher number of females, similar to a previous Nigerian study³⁶ involving healthcare workers on mentoring. Although there was a female preponderance, it did not lead to significant gender differences in perceptions about mentoring. This survey revealed a mentor-mentee relationship rated as positive without a gender difference. The positive mentor-mentee relationship resembles findings from a previous South African study on the workplace, where all participants reported positive relationship experiences.³⁷ Studies by Sheehan et al.³⁸ and Zhou et al.³⁹ support these findings. This study provided insights into Nigerian orthodontic residents' perceptions of mentorship, their experiences, and the significance of mentorship in medical education.

Implications: This study revealed that a structured mentorship program is necessary in orthodontic residency training in Nigeria. The study showed that mentorship might improve the clinical skills of orthodontic residents and their clinical practice.

Trade-Offs (Limitations): The study was cross-sectional, and the results were based on self-reported perceptions. This posed a bias to the interpretations of the results, making them subjective rather than more objective. The sample size of the study is small based on the number of orthodontic residents in training in Nigeria.

Take-Home (Conclusion): Orthodontic residents in this study valued mentorship but reported inconsistent access to structured, ongoing guidance. Programs should move from informal mentoring towards deliberate, institutionally supported models. Strengthening mentorships may enhance residents' professional development, well-being, and preparedness for independent practice. Mentorship should be encouraged in orthodontic residency training in Nigeria because of its advantages in postgraduate medical training.

Expectations for Future Research: The same standard of mentorship program should be operated in all centers of orthodontic training in Nigeria and future studies should be directed at investigating this.

Recommendations:

1. Mentorship should be adopted in orthodontic residency training and operated formally.
2. The program should establish formal mentor-mentee pairings at the start of residency, scheduled meetings per year, and clear expectations for discussion topics during the meetings.

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REFERENCES

1. General Medical Council. Good medical practice: induction and mentoring [Internet]. London: GMC; 2017 [cited 2025 Feb 11]. Available from: http://www.gmc-uk.org/guidance/ethical_guidance/11825.asp
2. Agu FU, Ugwa LM, Ogboso K. Academic mentoring-relationship: A necessity for the sustainability of education in Nigerian universities. *Int Stud Educ.* 2015;16:54-62.

3. Yeung M, Nuth J, Stiell IG. Mentoring in emergency medicine: the art and the evidence. *CJEM*. 2010;12(2):143-9. Keane M, 4. Long J. Mentoring in post-graduate medical education and specialist training [Internet]. Dublin: Health Research Board; 2015 [cited 2025 Feb 11]. Available from: <http://hdl.handle.net/10147/556404> Thomas-McLean R, Hamoline R,
5. Quinlan E, Ramsden VR, Kuzmiec J. Discussing mentorship: an ongoing study for the development of a mentorship program in Saskatchewan. *Can Fam Physician*. 2010;56(7):e263-72.
6. Arnesson K, Albinsson G. Mentorship: a pedagogical method for integration of theory and practice in higher education. *Nord J Stud Educ Policy*. 2017;3(3):202-17.
7. Wang J, Odell SJ. Mentored learning to teach according to standards-based reform: A critical review. *Rev Educ Res*. 2002; 72(3):481-546.
8. Ohanchani S, Chang D, Ong JSL, Anwar A. The value of peer mentoring for the psychosocial well-being of junior doctors: a randomized control study. *Med J Aust*. 2018;209(9):401-5.
9. Etim SS, Umeh OD. Mentorship in orthodontics training in Nigeria: the trainers' perspective. *J Clin Res Rep*. 2025;2 0(1):1-6.
10. Ughasoro M, Musa A, Yakabu A, Adeuye B, Folahanmi A, Isah A, et al. Barriers and solutions to effective mentorship in health research and training institutions in Nigeria: mentors, mentees, and organizational perspectives. *Niger J Clin Pract*. 2022; 25(2):215-20. Buowari DY, Ebirim LN. Mentoring: a survey of resident doctors in a developing country. *Yen Med J*. 2021; 3(2): 67-74.
11. Adeoti B, Otuyemi OD. Mentoring perception and experiences among Nigerian undergraduate dental students. *Niger Dent J*. 2024;32(1):34- 43.
12. Dent J. 2024;32(1):34- 43.
13. Obayemi E, Quartey ET, Tettey E, Acqhan M, Benneh A, et al. An exploratory study of mentoring in residency training at a Ghanaian teaching hospital. *Int J Mod Educ Res*. 2014;1(2):48-52.
14. Andrades M, Bhanji S, Valliant M, Majeed F, Pinjani SK. Effectiveness of a formal mentorship program in family medicine residency: the residents' perspective. *J Biomed Educ*. 2013; 2013: 1-3.
15. Madhuri SK, Ujwala JK, Yahashrii S, Deshmukh YA, Patil DY. Mentoring for medical students. *Curr Res J Soc Sci*. 2010;2(3):187-90.
16. Nimmons D, Giny S, Rosenthal J. Medical student mentoring programs: current insights. *Adv Med Educ Pract*. 2019;10:113-23.
17. Stamm M, Buddeberg-Fischer B. The impact of mentoring during postgraduate training on doctors' career success. *Med Educ*. 2011;45(5):488-96.
18. Akinmokun OI, Akinsulire AT, Odugbemi TO, Odogwu KC, Giwa SO. Mentorship in orthopaedic and trauma residency training programme in Nigeria: the residents' perspective. *Niger J Med*. 2016;25(2):134-41.
19. Sambunjak D, Straus SE, Marusic A. Mentoring in academic medicine: a systematic review. *JAMA*. 2006;296(9):1103-15.
20. Sola MA. Mentoring and its influence on the career development of academic members of selected tertiary institutions in Oyo State, Nigeria. *Asian Res J Arts Soc Sci*. 2018;6(1):1-9.
21. Julius E, Wakkala GT, Mairo D. Mentorship and professional development of young academic staff in some selected universities in North-West, Nigeria. *J Adv Educ Philos*. 2024;8(3):156-67.
22. Williams LL, Levine JB, Malhotra S, Holzheimer P. The good-enough mentoring relationship. *Acad Psychiatry*. 2004;28(2):111-5.
23. Bhatnagar V, Diaz S, Bucur P. The need for more mentorship in medical school. *Cureus*. 2020;12(8):e9904.
24. Olorunmoteni OE, Esan OT, Kareem AJ, Edward S, Babalola TE, Ugowe O. Mentoring practices and needs of paediatric resident doctors in Nigerian training institutions. *Niger J Health Sci*. 2019;19(2):73-80.
25. Ong J, Swift C, Magill N, Ong S, Day A, Al-Naeef Y, et al. The association between mentoring and training outcomes in junior doctors in medicine: an observational study. *BMJ Open*. 2018;8(9):e023721.
26. Lau C, Ford J, Vanlieshout R, Saperson K, McConnell M, McCabe R. Enhancing mentorship in psychiatry and health sciences: a study investigating needs and preferences in the development of a mentoring program. *Multidiscip Sci J*. 2018;1(1):8-18.
27. Garr RO, Dewe P. A qualitative study of mentoring and career progression among junior medical doctors. *Int J Med Educ*. 2013;4:247-52.
28. Khair A, Abdulrahman H, Hammadi A. Mentorship in Arab Board paediatric residency training program: a questionnaire based study—Qatar experience. *J Community Med Health Educ*. 2016;6(4):1-8.
29. Ramanan RA, Phillips RS, Davis RB, Silen W, Reede JY. Mentoring in medicine: keys to satisfaction. *Am J Med*. 2002;112(4):336-41.
30. Mellon A, Murdoch-Eaton D. Supervisor or mentor: is there a difference? Implications for paediatric practice. *Arch Dis Child*. 2015;100(9):873-8.
31. Davey Z, Jackson D, Henshall C. The value of nurse mentoring relationships: lessons learnt from a workplace resilience

- enhancement programme for nurses working in the forensic setting. *Int J Ment Health Nurs*. 2020;29(5):992-1001.
32. Kashiwagi DT, Varkey P, Cook DA. Mentoring programs for physicians in academic medicine: a systematic review. *Acad Med*. 2013;88(7):1029-37.
 33. Nwalieji CA, Onukansi FO, Anokwuru CC, Ikhuoria OV, Eneh SC, Nwuzoh MI, et al. Mentorship in African health and clinical research: addressing barriers and building research capacity. *Hum Resour Health*. 2025;23(1):55-61.
 34. Reid MB, Misky GJ, Harrison RA, Sharpe B, Auerbach A, Glasheen JJ. Mentorship, productivity, and promotion among academic hospitalists. *J Gen Intern Med*. 2012;27(1):23-7.
 35. Harrison R, Anderson J, Laloe P, Santillo M, Lawton R, Wright J. Mentorship for newly appointed consultants: what makes it work? *Postgrad Med J*. 2014;90(1066):439-45.
 36. Okereke E, Tukur J, Ogini AB, Obonyo B. Evaluating health workers' knowledge following the introduction of clinical mentoring in Jigawa State, Northern Nigeria. *Afr J Reprod Health*. 2015;19(3):118-25.
 37. Rubbi Nunan J, Ebrahim A, Stander M. Mentoring in the workplace: exploring the experiences of mentor-mentee relations. *SA J Ind Psychol*. 2023;49:a2152.
 38. Sheehan A, Elmir R, Hammond A, Schmied V, Coulton S, Sorensen K, et al. The midwife-student mentor relationship: creating the virtuous circle. *Women Birth*. 2022;35(5):512-20.
 39. Zhou AJ, Lapointe É, Zhou SS. Understanding mentoring relationships in China: towards a Confucian model. *Asia Pac J Manag*. 2019;36(2):415-44.