**Evaluation of the Effectiveness of Mentoring in Medical Education in Rivers State University, Nigeria**

ABSTRACT

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| **Background:** Mentoring is a protected relationship which supports learning and experimentation and helps individuals develop their potential. The practice of mentoring in medicine helps medical students to become better clinicians by broadening their clinical exposure and experience, most obviously concerning diseases. However, there is littleare or no provisions made for the mentoring of medical students in most universities, particularly in developing countries, including Nigeria.  **Aims:** The study investigated the effectiveness of mentoring in medical education at Rivers State University.  **Methodology:** A descriptive survey research design was used, with a sample of 69 medical students from the Faculty of Clinical Sciences, Rivers State University, representing different academic levels (Year 4, Year 5, and Year 6) between September 2024 and December 2024. The study population consisted of 126 medical students in the register of the Faculty of Clinical Sciences, which consists of 52 in year 4, 38 students in year 5 and 36 students in year 6. Any mean below the criterion mean was rejected, while any mean above 2.5 was accepted. The criterion mean is calculated thus: 4+3+2+1= 10/4 = 2.5. Stratified random sampling was applied to select 55% of students from each academic level. Data were collected using a structured questionnaire titled "Effectiveness of Mentoring in Medical Education in Rivers State University Questionnaire" (EMMERSUQ). The validity of the instrument was confirmed by experts in measurement and evaluation, and its reliability was tested through a test-retest method, yielding a high correlation coefficient of 0.92. The EMMERSUQ items were constructed based on a 4 points4-point scale of Strongly Agreed (SA), Agreed (A), Strongly Disagreed (SD) and Disagreed (D).  **Results:** The findings indicated that while mentoring programs provided support in areas like research skills, career development, and speciality guidance, there were significant gaps in clinical mentoring and communication skills development. The study also revealed that mentoring had a limited impact on improving communication, professionalism, personal growth, career development, and emotional, social, and cognitive development. Barriers to effective mentoring included mentor unprofessionalism, breaches of professional boundaries, and bullying.  **Conclusion:** The results suggest that Rivers State University's mentoring program needs improvements, particularly in clinical training, communication skills, and emotional support for students. Enhancing the quality and inclusivity of the mentoring programme could better prepare medical students for the complexities of the medical profession and ensure they are equipped with the skills needed to succeed both academically and in patient care. The study recommends formalising mentorship structures, enhancing mentor training, ensuring psychological safety, and addressing deficiencies in practical and interpersonal skill development to better equip students for medical practice. |

*Keywords: Medical Education, Rivers State University, Career Development, Clinical Mentoring, Communication Skills, Unprofessionalism, Medical Students*

1. INTRODUCTION

The global increase in morbidity and mortality rates requires an increase in mentoring of medical students to acquire vast knowledge of the medical field, which will enable them to handle health issues more professionally (1). Despite mentoring being vital in medical education, medical education literature lacks a uniform mentoring definition. Definitions include “a longitudinal relationship in which guidance and advice is given for the purpose of professional development a naturally formed, one-to-one, mutual, committed, nonsexual relationship between a junior and senior person designed to promote personal and professional development beyond any particular curricular or institutional goals (Minor & Bonnin,2022; Yang et al.,2022). The practice of mentoring in medicine helps medical students to become better clinicians by broadening their clinical exposure and experience, most obviously concerning diseases (2). Mentorship is a critical component of career development, particularly in academic medicine(Cree-Green et al.,2020). It is reported that few students, including medical students, avail themselves of the opportunity. However, there are or no provisions made for the mentoring of medical students in most universities, particularly in developing countries, including Nigeria. The word “mentor” originates from the Greek mid-eighteenth century, and in Homer’s epic, The Odyssey. In the present day, the word can be used as a verb “to advise or train”, or a noun defined as: “an experienced and trusted adviser” (3).

Mentoring is a protected relationship which supports learning and experimentation and helps individuals develop their potential (4). Contexts of mentoring include a personal–professional relationship to an educational process; an organizational, cultural, and global context; and a systemic reform strategy that builds human capacity (Mullen & Klimaitis,2021). A mentoring relationship is one where both mentor and mentee recognise the need for personal development. Successful mentoring is based upon trust and confidentiality. It is a learning relationship which helps people to take charge of their own development, to release their potential and to achieve results which they value.

Mentoring in education involves pairing young people with an older peer or adult volunteer who acts as a positive role model. In general, mentoring aims to build confidence and relationships, to develop resilience and character, or to raise aspirations, rather than to develop specific academic skills or knowledge (4). A mentor in medical education may play a variety of roles, such as coach, teacher, or supervisor. But unlike teaching, mentoring entails building a relationship with a focus on accomplishing particular objectives (3). A mentor is employed to counsel and teach a less experienced student or colleague.

Through the process of mentoring, a senior employee of an organisation acts as a junior employee's sounding board for questions and concerns about their career. The mentor can also offer career-related advice and assistance, which can greatly improve the junior employee's career satisfaction and success (5). One helpful strategy for preparing and integrating fresh medical graduates into the workforce is mentoring. It allays young doctors' fears of failing due to inexperience by giving them the chance to acquire the knowledge and expertise needed to practice under the supervision of a more experienced physician (6). Medical students who receive mentoring gain from it, though the needs of the healthcare system are also met. A few medical schools have designed programmes expressly to use mentorship to prepare medical students for careers (7). The U.S. medical system has been called upon to encourage and assist more medical students and young physicians to submit to mentoring programmes.

Education is an essential tool for the development of a country, and for development to occur, clinicians must receive the right mentorship to perform their duties. Undergraduate, graduate, and ongoing professional development of practising physicians are all impacted by medical education (8). The goal of medical education is to produce a well-informed, proficient, and modern group of medical doctors who prioritise the needs of their patients over their interests and who commit to continuing their education and professional growth throughout their lives. Medical education, which prioritises patient accountability, is founded on a genuine partnership rather than blind and unquestioning trust. This partnership encompasses teaching, learning, and the structure of clinicians' professional development training (9).

On average, mentoring appears to have a small positive impact on academic outcomes. The impacts of individual programmes vary. Some studies have found more positive impacts for pupils from disadvantaged backgrounds, and for non-academic outcomes such as attitudes to school, attendance and behaviour. There are risks associated with unsuccessful mentor pairings, which may have a detrimental effect on the mentee, and some studies report negative overall impacts. Programmes which have a clear structure and expectations, provide training and support for mentors, and recruit mentors who are volunteers, are associated with more successful outcomes. There is no evidence that approaches with a single focus on improving academic attainment or performance are more effective; programmes with multiple objectives can be equally or more effective.

Mentoring programmes have struggled despite the widely acknowledged importance of medical education, the lack of experienced clinical mentors, changes in mentoring and clinical practice, and evolving expectations for mentees, mentors, and mentoring relationships (10).

The concerns surrounding negative role modelling have grown over time. When students observe unethical behaviour in a clinical setting, this happens. If these concerns are not formally addressed, it can worsen the effects of this kind of behaviour and lead to a decline in ethics instead of promoting positive professional enculturation.

Also, the design and delivery of these programmes can vary significantly, making direct comparisons difficult. However, the majority of mentors receive training upon appointment; however, they might not receive monetary compensation or time off for their mentoring efforts. Furthermore, the success of a mentoring relationship and engagement may be impacted by students who do not believe they require a mentor. As a result, mentees and mentors must be matched in a way that supports the success of their relationship, whether this is done through mentee-chosen mentors or the use of verified matching services.

To assist junior academics in gaining confidence and moving up to a higher level, mentoring programs are available. Because of the risk, change, staff competition, unethical career practices, high levels of uncertainty, and unfavourable government policy implementation surrounding the medical industry, mentoring is necessary in this field (11). Through this program, mentees get the academic and technical skills they need to advance in their careers, as well as exposure, coaching, protection, challenging assignments, and sponsorship. Through friendship, counselling, acceptance, and confirmation, psychosocial functions improve the mentee's sense of competence and self-image (12).

Mentoring programmes can help students develop their professionalism, personal growth, knowledge, and skills. They are becoming more and more recognised as essential curriculum components in medical schools (3). They have also been demonstrated to be helpful in attracting and keeping trainees in underrepresented fields, such as academic medicine. Mentors who are medical students have the opportunity to hone their teaching and communication abilities and expand access initiatives that support greater diversity in the medical field (3).

Designing effective and formal mentoring programmes for medical students remains challenging, and only a minority of medical schools offer formal programmes. Mentoring programmes are of value to mentees, mentors, and institutions, including medical schools and offer benefits. Mentoring has been identified as crucial to the retention and recruitment of trainees in medical and surgical specialities, as well as promoting research and academia.

This study aims to evaluate the effectiveness of mentoring in medical education at Rivers State University, Nigeria.

**Objectives**

1. To examine various mentoring programmes in medical education at Rivers State University.
2. To determine the effectiveness of mentoring in medical education at Rivers State University.
3. To identify factors affecting the effectiveness of mentoring in medical education at Rivers State University.

**Research questions**

1. What are the various mentoring programmes available to medical students at Rivers State University?
2. What is the effect of mentoring on medical students in medical education at Rivers State University?
3. What are the factors affecting the effectiveness of mentoring in medical education at Rivers State University?
4. What suggestions can you give to improve mentoring programmes in medical education at Rivers State University?

2. Materials and Methods

A sequential explanatory study design was adopted for this study. The study examined various mentoring programmes in medical education to determine the effectiveness of mentoring in medical education at Rivers State University. It also identified the factors influencing the effectiveness of mentoring medical students at Rivers State University. The study was carried out in the Faculty of Clinical Sciences of the College of Medical Sciences in Rivers State University. The Rivers State University (RSU), Port Harcourt was established in October 1980 from the Rivers State College of Science and Technology, which was itself established in 1972. It is located at Nkpolu-Oroworukwo in Port Harcourt, the capital of Rivers State, Nigeria. Rivers State University is the first Technological University in Nigeria and the first state government owned University in the Niger Delta region of Nigeria. The motto of the University is “Excellence and Creativity”. The language of instruction in the institution is English. The University is comprised of thirteen Faculties which include faculty of: Agriculture, Basic Medical Sciences, Basic Clinical Sciences, Clinical Sciences, Engineering, Education, Environmental Sciences, Law, Sciences, Management Sciences, Communication and Media Studies, Humanities and Social Sciences.

The study population consisted of 126 medical students in the register of the Faculty of Clinical Sciences, which consists of 52 in year 4, 38 students in year 5 and 36 students in year 6.The sample size of the study was 69 medical students, which comprised 28 students from year 4, 21 students from year 5 and 20 students from year 6. The stratified random sampling technique was used to select 55% of the students from each academic level (i.e. 55% of each stratum). The instrument for data collection was a structured questionnaire titled “**Effectiveness of Mentoring in Medical Education in Rivers State University Questionnaire (EMMERSUQ**). The instrument was divided into: Section ‘A’, which contained demographic information of the respondents; and Section ‘B’ contained items used to collect information on the various questions posited in the study. The EMMERSUQ items were constructed based on a 4-point scale of Strongly Agreed (SA), Agreed (A), Strongly Disagreed (SD) and Disagreed (D). To ascertain the validity of the instrument, the instrument was first validated by two experts in Measurement and Evaluation in the Faculty of Education, Rivers State University, Port Harcourt, Nigeria. To determine the reliability of the instrument, a test-retest technique was employed. A pilot study was carried out by administering the instrument at intervals of two weeks to 20 medical students in the faculty of clinical sciences in a sister university. The reliability test was calculated using the Pearson Product-Moment Correlation. A correlation coefficient of 0.92 was obtained, which indicated high consistency of the items of the instrument. The researcher, with the help of three research assistants, administered the instruments to the respondents. Descriptive statistics, including the use of mean and standard deviation, were used to answer the research questions. The items on the questionnaire were structured using a four-point Likert rating scale. To arrive at the criterion, the mean, the responses option was weighed as follows: Strongly Agree – Four points, Agree-Three points, Disagree –Two points, Strongly Disagree- One point. Data analysis employed the use of percentage scores, mean score and criterion mean. Any mean below the criterion mean was rejected, while any mean above 2.5 was accepted. The criterion mean is calculated thus: 4+3+2+1= = 2.5. Ethical clearance for the study was obtained from the Research and Ethics Committee of the Faculty of Clinical Sciences of Rivers State University. On approval, the participants also gave their consent having been given the details of the study and ensured that their responses would be kept confidential.

3. results and discussion

Table 1 analysis revealed that 40 (58%) of the respondents are male, while 29 (42%) of the respondents are female.

**Table 1. Distribution of respondents by gender**

|  |  |  |
| --- | --- | --- |
| Sex | Number of respondents | Percentage (%) |
| Male | **40** | **58** |
| Female | **29** | **42** |
| Total | **69** | **100** |

Table 2 analysis revealed that 28 (41%) of the respondents were level 400 students, 21 (30%) of the respondents were 500 level students, and 20(29%) of the respondents were 600 level students.

**Table 2. Distribution of respondents by academic level**

|  |  |  |
| --- | --- | --- |
| Level | Number of respondents | Percentage (%) |
| 400 | 28 | 41 |
| 500 | 21 | 30 |
| 600 | 20 | 29 |
| Total | 69 | 100 |

Table 3 above shows that respondents agreed that research skills mentoring, career development mentoring, and specific speciality guidance mentoring are available to medical students in Rivers State University and disagreed that clinical mentoring and communication skills development mentoring are available to medical students in Rivers State University.

**Table 3. Mean responses on the various mentoring programmes available to medical students in Rivers State University**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | SA | A | D | SD | total | Mean | Standard Deviation | Remark |
| Clinical Mentoring | 18 | 29 | 48 | 4 | 69 | 2.1 | 0.87 | Disagree |
| Research Skills Development Mentoring | 2 | 23 | 33 | 11 | 69 | 2.7 | 0.74 | Agree |
| Career Development Mentoring | 8 | 27 | 27 | 7 | 69 | 2.5 | 0.82 | Agree |
| Specific speciality guidance mentoring | 8 | 24 | 31 | 6 | 69 | 2.5 | 0.80 | Agree |
| Communication skills development mentoring | 12 | 32 | 20 | 5 | 69 | 2.3 | 0.84 | Disagree |

Table 4 shows that respondents disagreed that mentoring helped medical students in improving their communication and listening skills, mentoring helped medical students to develop professionalism and support them in their personal growth as well as career development and research, mentoring helps to inculcate the neglected affective domain into the students, and molding them into caring human beings, mentoring in medical education help the mentee to network effectively with their peers and mentors and Mentoring helps build communication skills essential for medical student development the growth of medical student and accommodate their emotional, social and cognitive needs.

**Table 4. Mean responses on the effect of mentoring on medical students in medical education at Rivers State University**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | SA | A | D | SD | Total | Mean | Standard Deviation | Remark |
| Mentoring helped medical students improve their communication and listening skills in medical education. | 32 | 35 | 2 | 0 | 69 | 1.7 | 0.56 | Disagree |
| Mentoring helped medical students develop professionalism and supported them in their personal growth as well as career development and research in medical education. | 32 | 31 | 6 | 0 | 69 | 1.6 | 0.64 | Disagree |
| Mentoring helps to inculcate the neglected affective domain in the medical education into the students, and moulds them into caring human beings | 26 | 35 | 8 | 0 | 69 | 1.7 | 0.66 | Disagree |
| Mentoring in medical education helps the mentee to network effectively with their peers and mentors. | 35 | 30 | 4 | 0 | 69 | 1.5 | 0.58 | Disagree |
| Mentoring in medical education helped to build effective communication skills that facilitate the growth of medical student and accommodate their emotional, social and cognitive needs. | 32 | 34 | 4 | 0 | 69 | 1.6 | 0.59 | Disagree |

Table 5 shows that the respondents agreed that the factors that affect the effectiveness of mentoring in medical education are mentors’ unprofessional behaviour of breaching professional boundaries, bullying, racism, sexism and claiming credit for the mentee’s work in the mentoring process. They (respondents) also disagreed that the factors that affect the effectiveness of mentoring in medical education are that mentees in medical education do not believe that they can speak honestly and openly about their thoughts, fears and experiences, without negative repercussions, there is no adequate confidential environment that is essential for building trust and for psychological safety of the mentees in the mentoring process, issues of differences in power can limit the engagement of mentees, reduce trust, and there have been reports of power imbalance in mentoring leading to both bullying and sexual harassment, ineffective implementation of professional code of conduct for mentors and mentees setting out expectations, combined with appropriate oversight and monitoring of mentoring programmes by host institutions, mentors selecting a mentee that they feel they can identify with, with gender, cultural and backgrounds bias affects mentoring in medical education and mentors do not keep to scheduled meeting time with the mentees and this is making the students in medical education lose interest in mentoring in medical education

**Table 5. Mean responses on the factors affecting the effectiveness of mentoring in medical education in Rivers State University**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | SA | A | D | SD | Total | mean | Standard Deviation | Remark |
| Mentees in medical education do not believe that they can speak honestly  and openly about their thoughts, fears and experiences, without  negative repercussions | 14 | 36 | 14 | 4 | 69 | 2.1 | 0.78 | Disagree |
| There is no adequate confidential environment that is essential for building trust and for the psychological safety of the mentees in the mentoring process. | 9 | 38 | 19 | 3 | 69 | 2.3 | 0.71 | Disagree |
| Mentors’ unprofessional behaviour of breaching professional boundaries, bullying, racism, sexism and claiming credit for the mentee’s work in the mentoring process | 12 | 23 | 25 | 9 | 69 | 2.5 | 0.94 | Agree |
| Issues of differences in power can limit the engagement of mentees, reduce trust, and there have been reports of power imbalance in mentoring leading to both bullying and sexual harassment | 8 | 35 | 21 | 5 | 69 | 2.3 | 0.77 | Disagree |
| Ineffective implementation of a professional code of conduct for mentors and mentees, setting out expectations, combined with appropriate oversight and monitoring of mentoring programmes by host institutions | 14 | 35 | 19 | 1 | 69 | 2.1 | 72 | Disagree |
| Mentors selecting a mentee that they feel they can identify with, with gender and cultural backgrounds, bias affects mentoring in medical education. | 21 | 28 | 18 | 2 | 69 | 2.0 | 0.82 | Disagree |
| Mentors do not keep to the scheduled meeting time with the mentees, and this is making the students in medical education lose interest in mentoring | 11 | 37 | 19 | 2 | 69 | 2.2 | 0.72 | Disagree |

**The suggestions respondents gave to improve mentoring programmes in medical education in Rivers State University include:**

**1. Mentorship Structure & Organisation**

Monthly meetings between mentees and mentors to discuss issues, mentorship should be voluntary, not mandatory, smaller groups of mentees for efficiency, mentees should be allowed to choose their mentor, mentees should have assurance of communication with mentors, mentorship should be comprehensive, including academic and life skills, there should be a formal mentorship program at rivers state university, establish clinical mentorship department and mentorship outreach events to encourage mentor-mentee relationships

**2. Mentoring Approach & Quality**

Avoid bias and favouritism, mentors should be approachable, open, and friendly, mentors should respect boundaries and maintain professionalism, confidentiality is essential for trust-building, training for mentors should be continuous, provide individualized mentorship, encourage reflection on clinical experiences, mentors should provide constructive feedback and assess the effectiveness of the mentoring program.

**3. Support Systems & Well-Being**

Create counselling units for students, therapists should assist struggling students, counsel students in case of academic failure, provide a confidential environment for psychological safety, create feedback systems to report misconduct and encourage senior students to mentor juniors.

**4. Engagement, Awareness & Promotion**

Raise awareness about mentorship's importance, solicit feedback from students, faculty, and administration, create awareness on the importance of mentors, promote mentorship as a holistic development tool, inform students about mentorship options and opportunities

**5. Professionalism & Career Development**

Align mentorship with medical school competencies, educate students on career paths after medical school, equip students with steps to become consultants, encourage professional behaviour and skills development, mentors should be coaches, helping mentees grow as medical professionals, and lecturers should be patient with diverse learning abilities

**6. Mentoring Program Effectiveness & Evaluation**

Evaluate mentorship program effectiveness regularly, offer incentives or awards for outstanding mentors, conduct regular reviews of mentorship programs, and ensure that mentoring is active, not just advisory

**Discussion**

The findings in Table 3 revealed that Research skills mentoring was noted as available at Rivers State University, which aligns with trends in medical education that emphasise the importance of research exposure. According to a study by Mendez and colleagues (13), research mentorship is crucial for cultivating critical thinking, scientific inquiry, and academic skills among medical students. Research mentoring has been shown to enhance students' interest in research careers and improve their ability to engage in scientific exploration (13). Therefore, the availability of research skills mentoring in Rivers State University is consistent with the emphasis placed on research in medical curricula worldwide. Similarly, career development mentoring was also reported as available, which is in line with findings from studies emphasising its significance. A study by Buja (14) highlighted that career mentoring helps medical students navigate the often complex decisions related to specialities and future professional goals. Mentors play a key role in guiding students toward career paths, providing advice, and fostering professional development (14). The existence of career development mentoring at Rivers State University reflects this understanding of its importance in shaping students' futures. The availability of speciality guidance mentoring is also a promising aspect of the program at Rivers State University. According to a study by Frank (15), medical students benefit greatly from mentorship in selecting their specialities, as it helps them gain insight into various fields, improving both their decision-making and overall satisfaction with their career choice. This kind of mentorship is particularly valuable for students in navigating the growing number of medical specialities available.

On the other hand, respondents disagreed that clinical mentoring is available. This is a critical issue, as clinical mentoring is central to the professional development of medical students. Previous studies have demonstrated that clinical mentoring provides students with the opportunity to develop practical, hands-on skills and learn from more experienced clinicians (16). Lack of clinical mentoring can lead to gaps in students' clinical experience, potentially impacting their readiness to provide patient care upon graduation. A survey by Kilminster. (17) also indicated that clinical supervision and mentoring are essential for bridging the gap between theoretical learning and real-world clinical practice. The findings also indicated that communication skills development mentoring is not readily available. Communication skills are indispensable for effective patient care, and mentoring in this area is critical for medical students. A study by Silverman (18) demonstrated that effective communication mentoring can improve medical students' ability to build rapport with patients, take thorough histories, and communicate treatment plans effectively. The lack of communication skills mentoring at Rivers State University, as reported in the study, suggests a need to incorporate this vital component into their curriculum.

The findings in Table 4 suggest that mentoring in the medical programme at Rivers State University is not perceived as having a significant impact on several critical areas of medical students' development, including communication and listening skills, professionalism, personal growth, career development, research, affective domain development, and emotional, social, and cognitive growth. Below, we will discuss these findings in the context of relevant studies in medical education and mentoring.

### Communication and Listening Skills

The finding that mentoring did not help medical students improve their communication and listening skills contrasts with a significant body of literature that emphasises the value of mentorship in developing these skills. Communication skills are fundamental for effective patient care and are often included as an essential component of medical training. According to Silverman (18), effective communication can be developed through both formal and informal mentoring, where mentors guide students in interactions with patients and the healthcare team. The lack of perceived improvement in this area at Rivers State University highlights a potential gap in the mentorship process, as communication skills are considered one of the most important competencies in healthcare. This gap could be addressed by integrating more targeted communication training into mentoring programmes.

### Professionalism and Personal Growth

The study also found that mentoring did not significantly help students develop professionalism or support their personal growth. Professionalism is a key outcome in medical education and is closely linked to student development in both cognitive and emotional domains. According to Cruess (19), mentoring is a crucial means of fostering professionalism, as mentors serve as role models, imparting not only clinical expertise but also professional attitudes, ethical conduct, and empathy. In addition, mentoring can encourage personal growth by providing students with emotional support, career guidance, and opportunities for self-reflection (20). The absence of perceived growth in these areas suggests that the mentoring programme at Rivers State University may not be sufficiently addressing these aspects of students' development.

### Career Development and Research

The findings also suggested that mentoring did not significantly help with career development and research. Career mentoring has been shown to play a pivotal role in guiding students toward appropriate career paths, helping them identify personal strengths, and providing advice on speciality selection (14). Similarly, research mentoring fosters critical thinking and allows students to engage in scholarly activities, which is essential for those considering academic medicine. However, the lack of impact in these areas, as reported in the study, raises concerns that the mentoring programme may not be adequately preparing students for these aspects of their future careers.

### Affective Domain and Moulding Caring Human Beings

Mentoring in medical education is also important for developing the affective domain—skills related to values, attitudes, and emotions. Studies have shown that effective mentoring programmes can help instil empathy, compassion, and a commitment to patient-centred care (20). The finding that mentoring did not significantly contribute to this domain suggests that the programme might not be fully addressing the emotional or humanistic aspects of medical education. For instance, medical students need mentorship not only in clinical and technical skills but also in managing the emotional demands of medical practice. This includes fostering attitudes of empathy, self-reflection, and patient-centred care (21).

### Networking with Peers and Mentors

Mentoring is widely regarded as a tool to facilitate networking among students, faculty, and healthcare professionals, yet respondents indicated that this was not perceived as a benefit. According to a study by Alzahrani (22), mentoring programmes help students develop professional networks that can support their future career advancement and provide guidance on how to navigate the complexities of medical education. The lack of networking benefits in the Rivers State University study suggests that the mentorship relationships might not be structured or supported in a way that promotes these connections.

### Emotional, Social, and Cognitive Needs

Finally, the absence of significant support for students' emotional, social, and cognitive needs highlights a critical gap in mentoring. According to a study by Stenfors-Hayes (23), mentoring in medical education plays a crucial role in providing social and emotional support, which is vital for student well-being and academic success. Mentors help students manage the stresses of medical school, provide emotional reassurance, and create a safe space for self-expression and development. The lack of support in these areas, as reported, suggests that the mentorship programme may not be sufficiently holistic in addressing the full range of students' needs. The findings from Table 4 suggest that the mentoring programme at Rivers State University may not be meeting its full potential in developing key competencies in medical students. Several studies highlight the importance of mentorship in fostering communication skills, professionalism, personal growth, career development, and emotional and social support. Therefore, it may be necessary to re-evaluate the mentorship structure to ensure that it addresses these critical areas of medical education. Enhancing the quality and scope of mentoring could help students better navigate the challenges of medical training, while also developing the competencies required for effective practice in healthcare.

Table 5 highlights several factors that respondents believe affect the effectiveness of mentoring in medical education at Rivers State University. The respondents agreed that unprofessional behaviours from mentors, such as breaching professional boundaries, bullying, racism, sexism, and claiming credit for mentees' work, negatively impact the mentoring process. Conversely, they disagreed with the notion that issues related to mentees’ inability to speak openly, lack of confidentiality, power imbalances, ineffective implementation of professional codes of conduct, and scheduling issues were significant factors affecting mentoring effectiveness.

### Unprofessional Behaviour in Mentoring

Respondents identified mentor unprofessionalism, including breaches of professional boundaries, bullying, racism, sexism, and claiming credit for mentees' work, as factors that affect the mentoring process. These behaviours have long been documented in the literature as having a detrimental effect on mentoring relationships. A study by Sambunjak (20) noted that unprofessional behaviours such as bullying and sexism in mentoring relationships can lead to a toxic environment, reducing mentees' trust and willingness to engage in the process. Similarly, a study by O'Donnell (24) found that mentoring characterised by mistreatment, such as belittling or inappropriate behaviours, can negatively affect both the mentee's academic performance and psychological well-being. Mentor claims of credit for a mentee’s work are also a concern, as this violates the fundamental principles of fairness and respect in a mentorship relationship. According to Hall (25), ethical mentoring should ensure that mentees receive appropriate recognition for their contributions, helping them develop confidence in their abilities and fostering a sense of autonomy in their professional growth.

### Mentee Trust and Psychological Safety

Interestingly, respondents disagreed that mentees in medical education do not believe they can speak openly about their thoughts, fears, and experiences. However, this issue has been highlighted in numerous studies as a critical factor in effective mentoring. A study by Côté (26) emphasised that a lack of psychological safety and an inadequate confidential environment can limit the mentee's willingness to engage in honest dialogue. When mentees do not feel safe to speak openly, the mentoring process suffers, and opportunities for meaningful personal and professional development are lost. This lack of psychological safety can also hinder mentees’ ability to express their concerns, fears, and challenges, ultimately affecting their growth as medical professionals.

### Power Imbalance and Trust

Respondents disagreed that power imbalances negatively affect mentoring. However, previous research suggests that power differences between mentors and mentees can indeed impact the mentoring relationship. In a study by Dweck and Yeager (27), power imbalances were found to reduce mentee engagement and trust, as mentees may feel uncomfortable or reluctant to challenge their mentors or voice concerns. In extreme cases, this can lead to inappropriate behaviours, including bullying or sexual harassment. The absence of a balanced power dynamic in mentoring can diminish the mentee's sense of agency and affect their overall learning experience.

### Professional Code of Conduct and Institutional Oversight

The finding that respondents disagreed with the notion that ineffective implementation of professional codes of conduct and oversight is a significant factor affecting mentoring suggests that institutional mechanisms are perceived to be functioning well. However, previous studies indicate that effective oversight and the establishment of clear expectations for mentors and mentees are critical to ensuring a high-quality mentoring relationship. A study by Green and Jackson (28) found that institutions with robust mentoring frameworks and oversight structures were more successful in promoting positive mentoring experiences and minimising the risks associated with unprofessional behaviours.

### Gender, Cultural, and Ethnic Background Bias in Mentoring

The respondents disagreed that gender, cultural, or ethnic background biases affect the mentoring process. However, research in medical education has shown that biases, including gender and cultural bias, can significantly impact the quality of mentoring. In a study by Burgess (29), gender and racial biases were found to influence mentor selection and treatment, often leading to disparities in mentorship opportunities and the quality of mentoring relationships for certain groups of students. These biases can limit opportunities for mentees from underrepresented groups and affect their overall experience in medical education.

### Scheduling and Loss of Interest

Finally, respondents disagreed that mentors' failure to keep scheduled meetings negatively impacts mentees’ interest in mentoring. However, this issue has been noted in other studies. A study by Steinert (30) emphasised that consistency in meetings is essential for building trust and maintaining engagement in the mentoring relationship. Irregular meetings or a lack of commitment from mentors can cause mentees to lose interest in the process, as continuity and regular feedback are essential for their growth and development.

4. Conclusion

This study assessed the mentoring programs available to medical students at Rivers State University, focusing on various aspects such as research skills, career development, clinical mentoring, communication skills, and the impact of mentoring on students’ overall growth. The findings reveal that certain mentoring areas, such as research skills, career development, and speciality guidance mentoring, are readily available, aligning with trends in global medical education, emphasising the importance of these components for students’ academic and professional development. However, critical areas like clinical mentoring and communication skills development were reported as lacking, suggesting a gap in the practical training and essential interpersonal skills needed for effective patient care.

Furthermore, the study found that mentoring at Rivers State University has not significantly impacted areas like communication skills, professionalism, personal growth, emotional and cognitive development, and career and research growth. This highlights a potential deficiency in the holistic nature of the mentoring process at the institution, suggesting that more targeted efforts are needed to support students in these domains. The study also identified several factors that affect the effectiveness of mentoring, including mentor unprofessionalism, bullying, and sexism. While the respondents disagreed with concerns related to mentee trust, psychological safety, and power imbalances, research indicates that these factors are critical to fostering a positive and productive mentoring environment. The lack of these essential aspects may hinder the overall success of the mentoring programme, preventing students from fully benefiting from their mentor relationships.

In conclusion, while certain aspects of the mentoring programme at Rivers State University are commendable, the findings suggest that improvements are needed in areas such as clinical and communication skills mentoring, psychological safety, and a more holistic approach to supporting students' emotional, cognitive, and professional development. Enhancing the quality and inclusivity of the mentoring programme could better prepare medical students for the complexities of the medical profession and ensure they are equipped with the skills needed to succeed both academically and in patient care. Recommendations for programme improvements include formalising mentorship structures, increasing mentor training, ensuring psychological safety, and addressing the gaps in practical and interpersonal skill development to better prepare students for medical practice.

Consent

Written informed consent was obtained from the respondents for participation in this research. A copy of the written consent is available for review by the Editorial Board members of this journal.

Ethical approval

Ethical approval for this study was gotten from the Research and Ethics Committee of Rivers State University, Port Harcourt, Nigeria. Consent was also taken from all participants and their right to refusal of participation was clearly stated.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Details of the AI usage are given below:

1.

2.

3.

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