



Original Article

## Impact of Integrated Mentorship Programme Introduced in the Department of Pathology

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### ABSTRACT

**Background:** Competency-Based Medical Education (CBME) emphasises holistic development, professionalism, self-directed learning, and ethical conduct in undergraduate medical training. Traditional didactic teaching in pathology often lacks structured mentorship to address these domains. Thus, there was a need to design and implement a structured mentorship programme. Further, it was evaluated for academic outcome.

**Material & Method:** A descriptive educational intervention study was conducted in the Department of Pathology of Prasad institute of medical sciences, Lucknow. The programme incorporated academic, professional, and skill-based activities, including AETCOM discussions, skill laboratory sessions, journal record monitoring, research orientation, home assignments, class tests, seminars, library assignments, and museum study. The study group comprised of 150 MBBS phase II students, where 15 students were allocated to one mentor. At the end of the semester, student feedback was collected using a structured questionnaire, and descriptive analysis was performed.

**Results:** It was found that the mentorship programme was well accepted by students. Improved student engagement, better academic discipline, enhanced communication, increased awareness of research methodology, and improved ethical understanding were reported. Majority of students perceived the programme as beneficial for academic support and personal guidance.

**Conclusion:** It was concluded that a structured mentorship programme in Pathology is feasible, effective, and aligns well with CBME objectives. Such programmes can be successfully replicated across other departments to promote comprehensive undergraduate medical education.

**Keywords:** Integrated mentorship programme, Department of Pathology, impact, feedback.

### INTRODUCTION

The term “mentor” originated in Greek mythology within Homer’s Odyssey, and its use in the English language dates back to the mid-18th century. <sup>[1]</sup>

Mentorship plays a crucial role in shaping the academic, professional, and personal development of medical students. With the introduction of Competency-Based Medical Education (CBME), there is a growing emphasis on learner-centred teaching. For decades, undergraduate medical education, particularly in para-clinical subjects like pathology, has remained predominantly examination-oriented.

The academic demands of medical education are exhaustive, compounded by significant psychosocial stressors such as homesickness, environmental adjustment, and the weight of societal expectations. Students often face further hardships,

including the fear of ragging, social stigmatization, and intense educational pressure. To mitigate these challenges and support student well-being, a formal mentorship program is required. <sup>[2,3]</sup>

Pathology is a core subject that bridges basic sciences and clinical medicine. Students often face challenges in correlating theoretical knowledge with practical application, maintaining regular academic discipline, and developing research aptitude. A structured mentorship programme can address these gaps by providing continuous guidance, monitoring progress, and fostering a supportive learning environment.

This article describes the design, implementation, and evaluation of a mentorship programme introduced in the Department of Pathology for MBBS students.

## **AIM**

To evaluate and analyse the outcome of the Integrated mentorship programme.

## **OBJECTIVES**

1. To record responses of mentees involved in the mentorship programme.
2. To identify challenges faced by mentees during this programme.

## **MATERIALS AND METHODS**

### **Study Design**

Descriptive educational intervention study.

### **Study Setting**

Department of Pathology, undergraduate MBBS course.

### **Participants**

MBBS students of the phase II, Pathology were included in the programme. Faculty members of the Department of Pathology served as mentors.

### **Inclusion criteria**

Students who responded to the questionnaire.

### **Mentor–Mentee Allocation**

Students were allotted to mentors in a ratio of 1 mentor to 15 students, ensuring individualised attention and continuous interaction.

### **Duration**

The programme was conducted over one academic term.

### **Methodology**

At the start of the academic term of MBBS Batch 2023, students were exposed to class Tests, seminars, home assignments, Journal Record Monitoring, Research, Orientation, library Assignments, museum Study, Attitude ,ethics and communication activities (AETCOM) & Student Vertical Learning Laboratory Sessions (SVL)

After 3 months, mentorship programme was introduced, where mentors were allotted to students to guide these activities. Students were given a task, and formative assessment was made at regular intervals.

### **Data collection**

At the end of the academic term, student feedback was collected using a set of questionnaire comprising of close and open ended questions. Parameters assessed included:

- Academic support
- Mentor approachability
- Improvement in understanding of pathology
- Enhancement of communication skills
- Overall usefulness of the programme

The questionnaire incorporated specific, measurable, and quantifiable attributes related to mentor roles and responsibilities to assess the quality of the mentor–mentee relationship.

Mentees were invited to complete the questionnaire via Google Forms. Out of 150 students, 100 students responded. Their responses were recorded anonymously, and confidentiality was strictly maintained. A Likert-type summated rating scale was employed to capture participants' responses. A five-point agree–disagree continuum was used: 5 = Strongly

Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree (Table 1). For the purpose of statistical analysis, responses were subsequently consolidated into a three-point scale (Table 2).

The collected data were used to evaluate and assess the overall effectiveness of the mentorship programme. Descriptive analysis of responses was performed. Please refer bar charts (Fig. 1, 2, 3, 4)

## RESULTS

A summary of the survey findings is presented in Tables 1 and 2. The overall response pattern demonstrates a predominantly favourable perception of the mentorship programme and its integration with formative assessment strategies, with limited areas of concern.

The questionnaire responses were categorised into two domains: 1. formative assessment-related components and 2. integration of formative assessment within the mentor-mentee framework.

### Formative Assessment Domain

Formative assessment emerged as a key contributor to academic enhancement. The majority of students (80%) endorsed the multidimensional assessment format, which incorporated theory examinations, practical examinations, and research activities.

Repeated internal assessments were perceived to have a positive impact, with 66% of respondents agreeing that it contributed to reduced anxiety and stress levels. Notably, 27% of students remained neutral, suggesting scope for further improvement in assessment methods.

With regard to academic workload, 63% of students reported that the assessment plan was not burdensome, whereas 13% perceived it as burdensome. This indicates that while the majority adapted well to the assessment framework, a minority experienced increased academic pressure.

### Integration with mentorship programme

A strong alignment between formative assessment and the mentorship programme was reported, with 83% of respondents either agreeing or strongly agreeing that mentorship activities complemented assessment processes. Only 8% expressed disagreement,

Satisfaction with the mentor allotment process and mentor accessibility was high (80%), indicating effective administrative planning and mentor engagement. Additionally, 76% of students reported that mentor inspiration and timely feedback positively influenced their academic performance.

A meaningful faculty-student relationship was acknowledged by 82% of respondents, who perceived that mentorship improved their communication skills and academic confidence.

Importantly, 80% of students reported a noticeable improvement in academic performance following implementation of the mentorship programme, whereas only 5% did not perceive any significant change. This finding suggests a substantial perceived academic benefit associated with the integration of mentorship and formative assessment. Overall, the programme received positive feedback from the majority of students. Key outcomes included:

- Improved academic discipline and regularity
- Better understanding of pathology concepts
- Increased confidence in seminars and discussions
- Enhanced awareness of ethical and professional issues
- Improved mentor-student rapport

### Challenges and Suggestions Reported by Students

While responding to the challenges faced during the programme, students identified time management as the major difficulty. Other minor issues included limited availability of mentors, concerns regarding the allotment process, communication gaps, and difficulty balancing the programme with preparation for other subjects.

Suggestions related to time management included requests to provide more time for assignments and to allocate proper time slots specifically designated for programme activities.

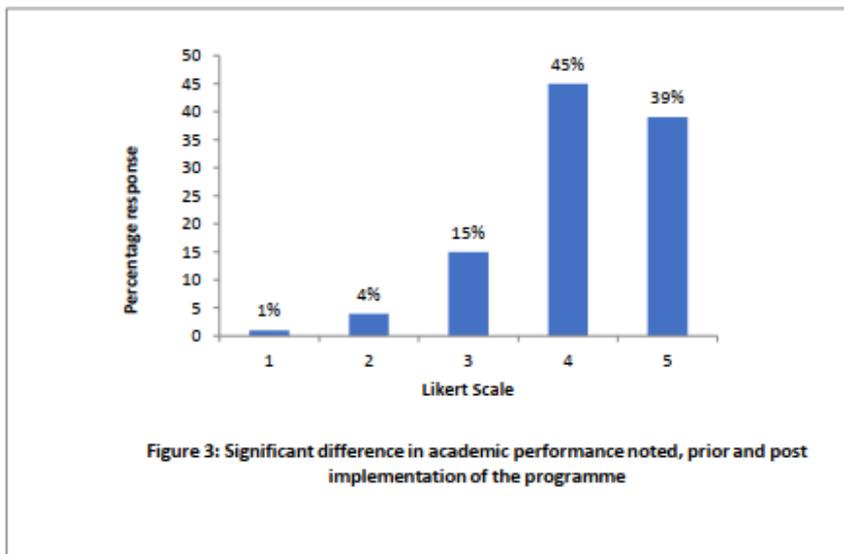
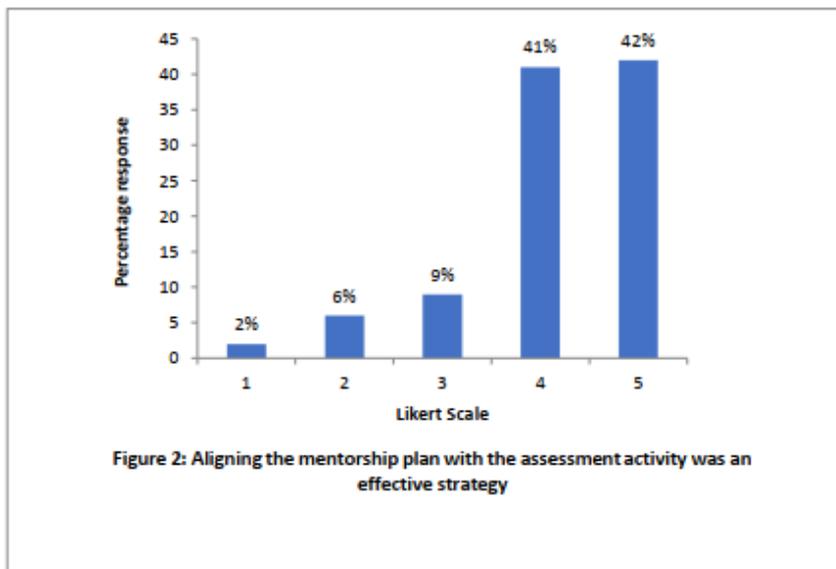
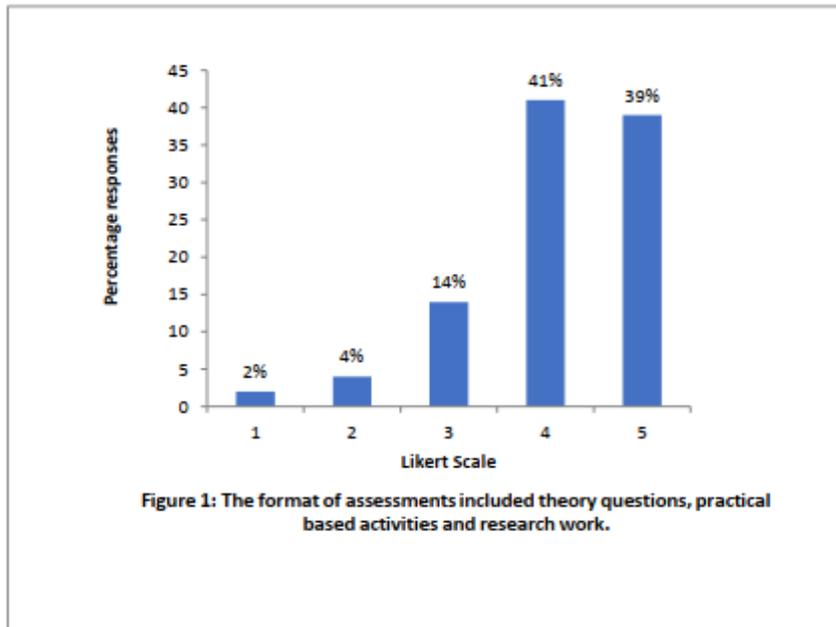
Assignment-related and mentoring suggestions included organising group discussions, implementing rotation of mentors, and conducting stress management sessions with mentors.

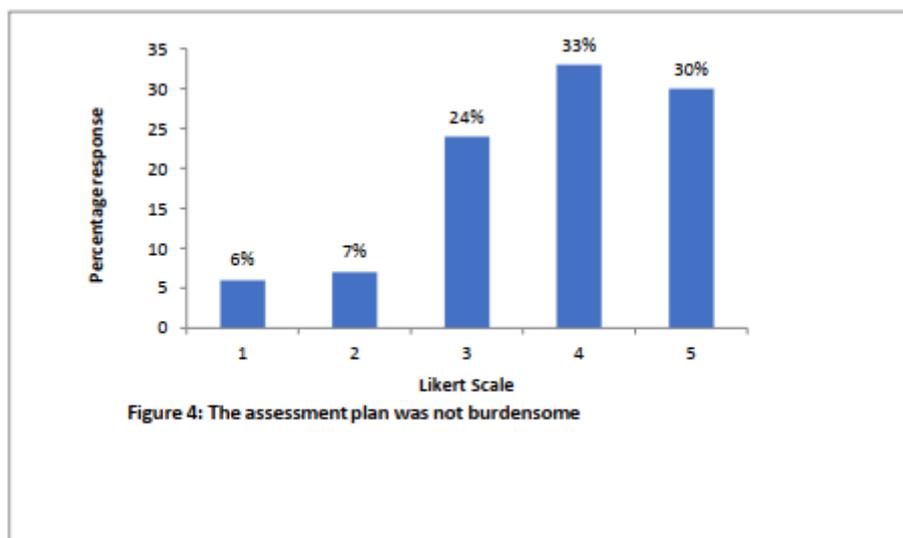
**Table 1: Survey result of mentees’ perception of mentorship programme expressed as percentage of responses.**

Mentee’s perception	Response percentage on Likert scale (n=100)				
	1	2	3	4	5
Questionnaire:					
The assessments helped me identify gaps in my knowledge.	0	3	18	39	40
The content was relevant to the topics taught in the class	1	1	7	48	43
The time allotted for the assessments was sufficient	3	3	22	40	32
The assessments helped reduce my anxiety regarding final exams.	2	5	27	27	39
The format of assessments included theory, practical & research activities	2	4	14	41	39
Aligning the mentorship plan with the assessment activity was an effective strategy.	2	6	9	41	42
The allotment process was satisfactory.	3	4	20	37	36
Mentors were approachable when we reached out for guidance.	0	5	8	31	56
My mentor inspired me to strive for academic excellence	0	2	14	13	51
The feedback from my mentor helped me understand my weak areas.	6	2	11	37	50
The assessment plan was not burdensome	6	7	24	33	30
Providing timely feedback and result of the assessments closed learning gaps	1	1	21	44	33
Mentorship helped me in building meaningful relationship with faculty / peer group.	0	3	13	44	40
This integrated assessment program helped me improve my communication skills	0	2	17	44	37
Significant difference in academic performance noted, prior and post implementation of programme.	1	4	15	45	35

**Table 2; Summary of the survey results of mentees’ perception of mentorship programme expressed as percentage of responses**

Mentee’s perception	Response % (n=100)		
	Disagree score (1+2)	Neutral score (3)	Agree score (4+5)
Questionnaire			
The assessments helped me identify gaps in my knowledge.	3	18	79
The content was relevant to the topics taught in the class	2	7	91
The time allotted for the assessments was sufficient	6	22	72
The assessments helped reduce my anxiety regarding final exams.	7	27	66
The format of assessments included theory, practical & research activities	6	14	80
Aligning the mentorship plan with the assessment activity was an effective strategy.	8	9	83
The allotment process was satisfactory.	7	20	73
Mentors were approachable when we reached out for guidance.	5	8	87
My mentor inspired me to strive for academic excellence	2	14	64
The feedback from my mentor helped me understand my weak areas.	8	11	87
The assessment plan was not burdensome	13	24	63
Providing timely feedback and result of the assessments closed learning gaps	2	21	77
Mentorship helped me in building meaningful relationship with faculty / peer group.	3	13	84
This integrated assessment program helped me improve my communication skills	2	17	81
Significant difference in academic performance noted, prior and post implementation of programme.	5	15	80





## DISCUSSION

The present study describes the implementation of a structured mentorship programme in the Department of Pathology and demonstrates its feasibility and acceptability among undergraduate medical students. The findings are consistent with existing literature that highlights the positive impact of mentorship on academic engagement, professional development, and student satisfaction.

Formative assessment was an integral component of our programme. Chethan B and Priyanka S <sup>[4]</sup> concluded that formative assessment is an effective educational tool that enhances learning without imposing additional academic burden, while simultaneously motivating students toward improved performance. This observation aligns with our findings, where students demonstrated improved performance and expressed appreciation for regular formative assessments incorporated within the mentoring framework.

Regular and structured meetings formed the backbone of our programme. Yedam Ho and Oh Young Kwon <sup>[5]</sup> emphasised that the effectiveness of mentoring programmes depends significantly on the frequency of meetings and the quality of discussions between mentors and mentees. Their study suggested that improved mentoring outcomes are associated with consistent interactions and thoughtful engagement. In agreement with these findings, our programme incorporated regular monthly meetings and structured academic discussions, which were perceived positively by students.

Nimmons and Giny <sup>[6]</sup> reported that positive mentoring relationships can play a crucial role in reversing the decline of interest in academic medicine by fostering research curiosity and scholarly engagement. In our study, the inclusion of research orientation and academic discussions contributed to enhanced student interest and improved academic outcomes following programme implementation.

Jiwan and Oberoi <sup>[7]</sup> evaluated the quality of mentorship programmes and found that mentoring positively influences both academic and personal growth. However, they identified infrequent meetings and limited personal interaction as major barriers to programme effectiveness. In contrast, the structured and frequent mentor–mentee interactions in our study appeared to strengthen faculty–student rapport and contributed to higher levels of student satisfaction. David et al. <sup>[8]</sup> suggested that mentoring programmes have the potential to improve participant satisfaction, although their findings did not reach statistical significance, possibly due to limited sample size. Our study involved a larger cohort, thereby improving the robustness of observations and supporting the conclusion that structured mentoring can positively influence student experience.

R.Navajothi et al <sup>[9]</sup> conducted a study with the aim of assessing the formative assessment pattern with the students' feedback and modify the pattern. The feedback was to add MCQs in the forthcoming tests. Application-type questions will be asked. Our study also incorporated assessment pertaining to theoretical, practical and research activities endorsed by 80 % students.

Furthermore, Udhayakumar et al. <sup>[10]</sup> emphasised that understanding mentees' perceptions regarding mentors, mentoring programmes, and mutual expectations enables mentors to adapt their strategies to better meet student needs. The favourable responses obtained from our structured questionnaire indicate that students perceived the programme as supportive, constructive, and aligned with their academic and personal development goals.

Overall, the findings of the present study strengthen existing evidence that structured, regular, and student-centred mentoring programmes significantly enhance academic performance, professional growth, and psychosocial well-being among undergraduate medical students. The integration of formative assessment, research exposure, AETCOM activities, and continuous interaction distinguishes this programme and supports its potential replicability in other departments.

## CONCLUSION

The structured mentorship programme implemented in the Department of Pathology was feasible, acceptable, and beneficial for undergraduate medical students. It enhanced academic performance and self-directed learning. Such programmes can be effectively integrated into undergraduate Pathology teaching and replicated across medical institutions.

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