ORIGINAL ARTICLE

MEDICAL STUDENTS' EXPERIENCES WITH THE INTEGRATED MODULAR CURRICULUM: A QUALITATIVE STUDY AT CENTRAL PARK MEDICAL COLLEGE, LAHORE

Amber Shami, Mehak Shafiq, Waleed Ahmed Butt*, Farheen Zehra, Aasma Qaiser***, Amaidah Mir†**

Department of Anatomy, Central Park Medical College, Lahore, *Department of Medical Education, CMH Kharian Medical College, Kharian, **Department of Medical Education Niazi Medical and Dental College, Sargodha, ***Department of Medical Education Islam Medical College Sialkot, †Department of Anatomy, CMH Kharian Medical College, Kharian, Pakistan

Background: Integrated modular curricula are increasingly adopted in medical education to promote conceptual learning and strengthen basic-clinical science integration. Qualitative evidence from Pakistani private-sector medical colleges remains limited. The objective of this study was to explore the academic and emotional experiences of medical students studying under an integrated modular curriculum at Central Park Medical College, Lahore. **Methods:** A qualitative exploratory study was conducted from Aug to Nov 2025. Second-year MBBS students enrolled in the integrated modular curriculum were recruited through purposive sampling. Data were collected via semi-structured in-depth interviews and analyzed using Braun and Clarke's six-step thematic analysis. Data collection continued until thematic saturation. **Results:** Six themes emerged: curricular perception, learning experience, integration of sciences, assessment and feedback, challenges and support, and clinical readiness. Students reported improved conceptual understanding, motivation, and clinical relevance. Challenges included heavy workload, time-management difficulties, fragmented assessments, and interdepartmental coordination gaps. Continuous assessments promoted regular study but emphasized factual recall over conceptual understanding. Peer, faculty, and institutional support aided adaptation. **Conclusion:** The integrated modular curriculum promoted meaningful learning and clinical relevance but revealed implementation challenges. Improving curriculum organization, faculty development, assessment strategies, and student support may maximize benefits of curriculum integration.

Keywords: Clinical competence, Integrated curriculum, Medical education, Medical students, Qualitative research

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INTRODUCTION

Globally medical education is undergoing a major transformation from traditional discipline-based teaching to integrated and student-centred approaches.[1] An integrated modular curriculum is designed to link basic sciences such as anatomy, physiology and biochemistry with clinical subjects in a coordinated and meaningful way, allowing students to understand how scientific knowledge is applied to real patient care. Instead of studying individual subjects in isolation, students learn through body systems, clinical scenarios, and thematic modules. This method aims to develop better clinical reasoning, deeper understanding and stronger professional identity from the early years of medical training.[2] In many countries, including Pakistan, medical education had traditionally followed a subject-based curriculum, where basic sciences were taught separately during the pre-clinical years and clinical subjects were introduced later. Although this approach helped students to acquire strong foundational knowledge, it often created a disconnect between theoretical knowledge and clinical practice.[3] Consequently, many students struggle to apply classroom knowledge to real clinical situations. Students often memorize large volumes of information without full understanding. As a result, graduates may enter clinical training with limited ability to integrate scientific knowledge into clinical decision-making.[4] To overcome these limitations, many medical schools globally have adopted an integrated modular curriculum. These curricula encourage students to learn through clinical cases, system based modules and problem focused learning, making education more relevant and meaningful. Integration also supports competency based medical education, where the goal is not only to pass examinations but to develop skilled, confident and ethical doctors who can provide safe and effective patient care. Research from many countries has shown that integrated learning can improve student motivation, conceptual understanding and long-term retention of knowledge.[5]

In Pakistan, medical education has also entered a period of reform. The Pakistan Medical and Dental Council and other regulatory bodies have encouraged medical colleges to adopt integrated and outcome based curricula inline with international standards. As a result,

several public and private medical colleges have shifted to modular and integrated systems.[6] Central Park Medical College, Lahore, is one of the institutions that have adopted an integrated modular curriculum to enhance educational quality and better prepare students for clinical practice. Modules are designed to bring together basic sciences and clinical topics so that students can see the connection between what they study and how it is used in patient care. Continuous assessments are used to keep students engaged throughout the year. In theory, this approach should improve motivation, understanding and readiness for clinical practice.

While the goals of integration are widely supported, the process of implementation is complex. Implementing a new curriculum involves more than revising timetables or course content; it also requires changes in teaching methods, assessment strategies, faculty roles, and student learning approaches. Without careful planning and support, students may struggle to adjust. This is particularly true for medical students who are already facing heavy academic pressure and high expectations.[7] Several studies conducted in different countries have reported that students may experience confusion, stress, and uncertainty during the transition to an integrated curriculum. Students may experience uncertainty regarding effective study strategies, time management and preparation for unfamiliar assessment formats. Instead of focusing on understanding, they may feel forced to memorize large amounts of information under time pressure. These difficulties can affect not only academic performance but also emotional well-being, motivation and confidence.[8]

Studies in South Asia have shown that lack of coordination between departments, poorly aligned assessments and unclear learning objectives can weaken the benefits of integration. When different subjects are not properly synchronized, students may face overlapping content in some areas and gaps in others. This makes it difficult to build a clear and structured understanding of the curriculum. As a result, the intended purpose of integration may not be achieved, and instead students may perceive learning as more complex and fragmented.[9] Therefore, students' personal experiences are valuable in evaluating the effectiveness of curriculum reform. Although examination results and curriculum documents provide useful information, students' interviews offer direct insight into how the curriculum functions in everyday practice. Their experiences reveal how teaching methods, assessment policies, workload and support systems affect their daily learning and emotional health. Understanding these experiences is essential for identifying what is working well and what needs improvement.[10]

Exploring these experiences is especially important in the Pakistani context, where medical students face intense competition, high parental expectations and demanding academic environments. A curriculum that increases stress without providing adequate support can negatively affect learning and mental health.[11] Conversely, a well-designed integrated curriculum can help students develop confidence, strengthen their professional identity, and foster a greater sense of purpose in their studies. Despite the growing adoption of integrated modular curricula in Pakistan, there is still limited qualitative evidence exploring students' experiences and perceptions, particularly in private-sector medical colleges. Most published studies have focused on academic outcomes or quantitative measures of satisfaction, with relatively little attention given to how students experience curriculum implementation in their daily learning environment. Understanding these experiences is essential because students' perspectives can identify practical challenges and strengths that may not be captured through examination results or survey data alone. This gap in the literature provides the rationale for the present study. The findings of this study are expected to provide valuable insights for curriculum developers, faculty members and policymakers working to improve medical education in Pakistan.

METHODOLOGY

This qualitative exploratory study was conducted using semi-structured interviews to explore the academic and emotional experiences of second-year MBBS students studying under the Integrated Curriculum System (ICS) at Central Park Medical College, Lahore, affiliated with the University of Health Sciences (UHS), from August to November 2025, after ethical approval from Institutional Ethical and Review Board (Ref. No. CPMC/IRB-No/1530).

Twelve, second-year MBBS students who were enrolled in the ICS participated voluntarily. Written informed consent was obtained from all participants. Participants were selected using purposive sampling by thematic saturation and recruitment ceased when no new themes emerged from the interviews. Students who had completed their first academic year under ICS, demonstrated regular attendance, and were fluent in English or Urdu were included. Students who had repeated the year, were on extended leave, or declined participation, were excluded.

Each participant completed a semi-structured interview based on a questionnaire containing open-ended questions designed to obtain detailed reflections on their learning experiences, assessment, integration and support systems. Interviews were conducted in a private room within the academic block and lasted approximately 45–60 minutes. Interviews were conducted in English or Urdu according to participants' preference, and were recorded and transcribed for

analysis. Participant anonymity was ensured using pseudonyms (P1–P12).

Data were analysed using Braun and Clarke's Six-Step Thematic Analysis Framework:[12]

1. Familiarization with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Coding was performed using NVivo 12 Pro (QSR International) to organize data, identify patterns and retrieve participant quotes.[13] Codes were grouped into categories and refined into overarching themes that reflected students' learning experiences, assessment, integration and support systems. Member checking was conducted with three participants to confirm accuracy of interpretations.

RESULTS

Six major themes emerged from the thematic analysis:

Theme-1: Students' View of the Curriculum

Sub-theme: Daily routine, strengths and weaknesses

Participants described their daily academic routine as long, tiring and confusing because different subjects were taught together. Several participants perceived the timetable as intensive and insufficiently organized.

"*Long lectures with mixed subjects make the day heavy and scattered.*" (P5)

"*More practical and relevant but overloaded and sometimes poorly organized.*" (P3)

"*I am satisfied by this system but it's kind of bitter and sweet.*" (P12)

Overall, participants recognized both the strengths and limitations of the curriculum, particularly in relation to workload management and organizational structure.

Theme-2: Change in Learning Style

Sub-theme: From memorizing to understanding

Most participants reported that the integrated curriculum improved their understanding of concepts and made them more motivated to learn.

"*The modular curriculum has made me focus more on understanding concepts.*" (P6)

"*Integrated curriculum made me more motivated.*" (P11)

Participants also described greater engagement and confidence as a result of the more meaningful learning experience.

Theme-3: Linking Basic and Clinical Sciences

Sub-theme: Understanding theory with clinical use

Many participants appreciated the integration of basic sciences with clinical scenarios. They reported that this approach enhanced their understanding of the practical application of medical knowledge. However, some participants expressed concern that the increased workload limited their ability to develop a strong foundation in the basic sciences.

"*It helps me a lot to connect theory with clinical cases.*" (P3)

"*It made it hard to focus on basic subjects.*" (P8)

Theme-4: Assessment and Feedback

Sub-theme: Continuous testing

Participants had mixed feelings about frequent tests. Although regular assessments encouraged continuous engagement with learning, several participants believed that they emphasized factual recall rather than conceptual understanding.

"*Assessments are frequent but feel fragmented.*" (P3)

Theme-5: Challenges and Support

Sub-theme: Workload and help from others

Participants identified the extensive syllabus and associated workload as major academic challenges. Nevertheless, many participants acknowledged that support from senior students, faculty members, and counselling services helped them cope with these challenges.

"*There is a big problem in time management.*" (P6)

"*We have a student counselling service which helps us a lot.*" (P12)

Theme-6: Clinical Readiness and Future Value

Sub-theme: Purpose and professional growth

Many participants perceived that the integrated curriculum enhanced their preparedness for clinical practice and increased the perceived relevance of their studies.

"*It boosts my motivation and makes studying feel purposeful.*" (P3)

"*It enhances my knowledge by integrating the basic and clinical subjects.*" (P12)

DISCUSSION

This study explored the experiences of medical students studying in an integrated modular curriculum at Central Park Medical College. The findings showed that the integrated system strongly influenced the learning, motivation, workload, emotional well-being and professional identity of students. Six major themes emerged including curricular perception, learning experience, integration of basic and clinical sciences, assessment and feedback, challenges and support and academic performance with clinical relevance. Together, these themes provide important insight into how the integrated curriculum is working in practice and how it is being experienced by students.

Students described their daily academic life as long, tiring and confusing due to mixed-subject lectures and heavy schedules. While they appreciated the clinical relevance of the curriculum but many felt that the syllabus was poorly organized and difficult to manage. These findings showed that although the integrated modular system has clear educational goals, its structure and delivery need improvement. Similar results have been reported in study of Muddassir *et al*[12] and Khurshid

S *et al*[14] where students found integrated schedules exhausting and difficult to follow due to overlapping content and poor coordination.

The 'bitter and sweet' description given by students reflects this dual experience. On one hand, integration made learning more meaningful; on the other, it increased mental and physical fatigue. Medical students already face heavy academic demands, and when integration is not carefully planned, instead of reducing the stress it increases it. This suggests that integrated curricula should not only focus on content integration but also on design of timetables, length of lectures and workload balance.[15]

One of the most positive findings was that the integrated curriculum changed the learning methods of students. Many students reported that now instead of rote memorization they have moved towards conceptual understanding. They felt more motivated, confident and engaged with their studies. This is one of the core aims of integration, to promote deeper learning rather than surface learning. Students' comments showed that they were able to see connections between different subjects, which helped them a lot to understand the concepts better. This aligns with the study of Bowen *et al* that integrated curricula support meaningful learning and improve the abilities of students to apply knowledge.[16] When students understand why they are learning something and how it connects to clinical practice, they are more likely to remain motivated.[17] However, motivation alone is not enough. If workload and organizations are poor, even motivated students can become overwhelmed. Therefore, if the learning approach is improved, the weaknesses in structural and administrative policies can reduce its full benefits.[18]

Students strongly valued the link between basic sciences and clinical practice. Many felt that connecting theory to real clinical cases made learning more relevant and helped them to understand medical concepts more clearly. This supports the core philosophy of integrated education that learning should be meaningful and clinically oriented from the start.[19]

However, not all students had the same experience. Some reported that the heavy workload and lack of coordination made it difficult to build strong basic knowledge. This is an important issue. Integration should strengthen, not weaken the basic sciences. If departments do not align their teaching or if students are overburdened, integration may actually harm foundational learning. This finding is in agreement to the study of Meng *et al*[20] who demonstrated the importance of proper sequencing and departmental coordination. Anatomy, physiology, pathology and clinical subjects must be carefully synchronized so that students can build knowledge step by step. Without this, integration becomes confusing rather than helpful.

Students had mixed opinions about continuous assessment. While frequent tests kept them involved and prevented from the chaos of last minute but many felt that assessments focused more on recall than understanding. This suggests a mismatch between teaching goals and assessment design. This is in accordance with the study of Jensen *et al*[21] who demonstrated that integrated curricula aim to promote higher order thinking, but if exams only test memorization, students will continue to use surface learning strategies. Assessment drives learning. If students know they will be tested on facts rather than concepts, they will study accordingly. This reduces the benefit of integration.

Students also reported that assessments felt fragmented and poorly coordinated. This again points to the need for interdepartmental collaboration. Integrated teaching requires integrated assessment tests that should reflect the connections between subjects and assess clinical reasoning, not isolated facts.[22]

Students faced major challenges related to time management and syllabus overload. The merged curriculum made it difficult to organize study time, leading to stress and fatigue. However, strong support from seniors, teachers and counselling services helped many students to cope. These findings are similar to the study of Putri GA, who described that support systems are essential in education. When students are challenged academically, emotional, social and academic support can protect them from burnout. Institutions must invest in mentoring, counselling and peer-support programs to help students to manage the demands of integrated learning.[23] Some students expressed dissatisfaction to faculty support, especially when teachers moved too quickly to clinical topics without ensuring strong basic understanding. This highlights the need for faculty training. Teachers must understand how to support students in an integrated environment.[24]

Despite of challenges, many students felt that the integrated curriculum improved their clinical readiness and gave meaning to their studies. They felt motivated because their learning was clearly connected to patient care. This is a powerful outcome. When students see the purpose of their education, they develop stronger professional identity and long term commitment to medicine.[25] This shows that integration can support lifelong learning and national educational goals by producing doctors who think clinically and work across disciplines. However, for this to happen, the system must be properly designed and supported.

CONCLUSION

The integrated modular curriculum at Central Park Medical College offers several educational advantages, including improved conceptual understanding, enhanced motivation, and stronger appreciation of the relationship between basic and clinical sciences. Students also

identified important challenges, particularly related to heavy workload, time management, fragmented assessments, and inadequate coordination between departments. Despite these concerns, institutional support systems and the perceived clinical relevance of the curriculum contributed positively to students' learning experiences. The effectiveness of an integrated curriculum depends not only on its design but also on its implementation. Strengthening departmental coordination, faculty development, assessment strategies, and student support mechanisms may help maximize the benefits of curriculum integration while minimizing the challenges experienced by learners.

LIMITATIONS AND RECOMMENDATIONS

This study was a single centre study and relied on self-reported interview data, which may limit generalizability and introduce personal bias. The findings reflect students' experiences rather than statistical representation. Future research should include multiple institutions by using longitudinal or mixed-method approaches and incorporate faculty perspectives too to gain a more comprehensive understanding of implementation of integrated curriculum.

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Address for Correspondence:

Dr Amaidah Mir, Department of Anatomy, CMH Kharian Medical College, Kharian, Pakistan. **Cell:** +92-330-5842835
Email: amaidahmir@gmail.com

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Authors approved the draft and are accountable in ensuring that questions related to accuracy or integrity of the work are duly investigated and resolved.

AS: Concept, Supervision **MS:** Helps to conduct interviews **WAB:** Referencing, Drafting of manuscript
FZ: Proof reading, Transcription of interviews **AQ:** Result compilation, Proofreading **AM:** Manuscript writing and revision

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