Academic Outcomes Following Implementation of an Integrated Curriculum, among 1st-year MBBS Students at CMH Kharian Medical College.

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ABSTRACT:

Objective: To explore the academic and emotional impact of the Integrated Curriculum System (ICS) on first year MBBS students at CMH Kharian Medical College (CKMC), focusing on their learning experiences, perceptions and adaptation challenges.

Methodology: A qualitative study was conducted among 11 first year MBBS students using semi-structured interviews comprising 22 open-ended questions. Participants were selected by using purposive sampling until thematic saturation was achieved. All interviews were transcribed and analyzed manually using Braun and Clarke's six-step thematic analysis approach.

Results: Seven major themes emerged: (1) Overwhelming transition, (2) Academic stress and workload, (3) Lack of coordination and implementation gaps, (4) Decline in academic performance, (5) Preference for traditional curriculum, (6) Rejection of integrated system (7) Conditional acceptance for future improvement. Most students perceived the integrated system as confusing and stressful, with limited short-term academic benefits. Despite its conceptual benefits, integration appeared to lead to decreased motivation and lower academic outcomes in this context.

Conclusion: While integration aims to promote conceptual learning, its effectiveness depends on structured implementation, teacher coordination, and assessment alignment. The findings are emphasizing the need for faculty training, better orientation and coordination across departments that are essential for effective integration.

Key words: Academic outcomes, Integrated curriculum, thematic analysis, student perceptions.

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Introduction:

An integrated medical curriculum is a type of educational approach that systematically connects basic and clinical sciences. This type of teaching modality has aligned the modules by both horizontal and vertical integration. From the earliest stages of medical education, it is promoting relevance, contextual understanding and clinical reasoning.[1] Globally, medical education has evolved toward integrated curricula. Unlike traditional discipline-based models whose focus is only confined to single subject such as anatomy, physiology and biochemistry, an integrated curriculum aims to help students to perceive the human body as a unified system and apply their knowledge to clinical scenarios. This shift aims to reduce gaps in traditional teaching, help students to learn better, encourages the problem-solving abilities , self-directed learning and give them earlier exposure to clinical practice.[2] This transition helps to overcome the fragmentation of knowledge that limits the application of preclinical learning to real life practice. Research since 2020 has shown that when the integration is well implemented, it enhances motivation, knowledge retention and long-term academic performance, helping students to develop stronger analytical and clinical reasoning skills.[3,4] The leading institutions such as Harvard, McMaster, and Maastricht are still working hard to refine integrated and problem-based learning (PBL) approaches to increase early clinical exposure and interprofessional collaboration.[5]

To bring local medical education in line with international standards in Pakistan, the Pakistan Medical and Dental Council (PMDC) and the Higher Education Commission (HEC) have accredited integrated and outcome based curricula.[6] As a result, many institutions have adopted the Integrated Curriculum System (ICS) to promote horizontal and vertical integration among basic and clinical disciplines.[7] However, despite these national reforms, there is still little research on how integration actually affects students' learning and experiences in individual medical colleges. Despite of all efforts, implementation challenges such as inadequate faculty development, poor assessment policies and student confusion have often reduced the potential benefits of ICS.[8] Recent studies in South Asia have indicated that medical students from first year MBBS often face confusion, cognitive overload and stress during the transition from traditional to integrated curricula. These challenges are very common in developing countries where educational transitions have often implemented rapidly, without adequate infrastructure or faculty readiness.[9,10] Moreover,

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faculty training and interdepartmental collaboration can play integral roles in determining how effectively integration translates into better learning outcomes.[11] Thus, evaluating both student performance and student perceptions are compulsory to understanding the true impact of curriculum reforms.

At CMH Kharian Medical College (CKMC), under National University of Medical Sciences (NUMS) the Integrated Curriculum System (ICS) was introduced in 2023. It has marked a major change in teaching and learning methodologies. The new curriculum focuses on theme-based learning, case discussions and coordination between different basic science subjects. Although this approach aims to make learning more meaningful by connecting it to clinical practice. Early observations have shown that students differ in how well they can adapt, stay motivated and perform in exams during the first few years of implementation. This study aims to find out how the new Integrated Curriculum has affected the academic results and learning experiences of first year MBBS students at CKMC. It also looks at the main challenges, advantages and areas where teaching and assessment methods can be improved.

The results of this research will play an important role to strengthen curriculum development in Pakistan by providing useful information for policymakers and teachers. It will also support faculty in making medical education more effective and student centered under the integrated system.

Methodology:

This qualitative exploratory study was conducted over a period of six months, from November 2024 to April 2025, at CMH Kharian Medical College (CKMC), a private-sector medical institution affiliated with the National University of Medical Sciences (NUMS), Pakistan. The study aimed to explore the academic and emotional impact of the Integrated Curriculum System (ICS) on first-year MBBS students, focusing on their learning experiences, perceptions, and challenges in adapting to the new curriculum. A purposive sampling technique was used to recruit participants who had completed their first academic year under the Integrated Curriculum System (ICS). A total of eleven first-year MBBS students participated in the study. The study was approved by the Institutional Review Board (IRB) of CMH Kharian Medical College with Ref. No CKMC/IERB/AC-00255. Participants were selected based on their willingness to share experiences and their regular attendance during the academic year. Inclusion criteria included first-year MBBS students enrolled under the Integrated Curriculum, who demonstrated consistent attendance, fluency in English or Urdu, and voluntary participation with informed consent. Exclusion criteria included students who had repeated the first year, those on extended leave, or those unwilling to participate in interviews.

Data was collected through semi-structured, in-depth interviews, conducted in a separate room within the academic block to ensure comfort and confidentiality. A flexible, open -ended interview guide consisting of 22 questions was developed after a review of literature and consultation with two experts in medical education and qualitative research.

The guide explored the following domains:

- Students' understanding of the Integrated Curriculum System.
- Perceived benefits and challenges.
- Academic stress and workload.
- Adaptation to integrated teaching and assessments.
- Emotional and motivational responses.
- Suggestions for improvement.

Each interview lasted approximately 45 to 60 minutes and was conducted in English or Urdu, depending on the participant's preference. All interviews were documented in written format, then transcribed for analysis. Participant anonymity was maintained by assigning pseudonyms (P1-P11).

Data Analysis:

Data were analyzed using Braun and Clarke's (2006) six-step thematic analysis framework.[12] This includes Introduction to the data, developing initial codes, looking for themes, recapitulating themes, developing and Naming Themes and drafting the report.

Data were analyzed using NVivo 12 Pro (QSR International), a qualitative analysis software that helped organize codes, group similar ideas, and efficiently retrieve relevant participant quotes.[13] Manual coding was initially performed and emerging codes were continuously reviewed and refined to ensure that themes accurately represented the participants' experiences. Themes were developed directly from the data instead of being based on pre-set ideas. The analysis looked for common patterns related to students' academic performance, feelings and opinions about how effective the curriculum was. To ensure the accuracy of the findings, initial interpretations of the data were shared with three participants for member checking to verify that their experiences were represented correctly.

Result:

Themes	Sub-Themes
Overwhelming Transition	Students reported initial confusion and emotional distress.
Academic Stress and Workload	The dense curriculum caused continuous pressure.
Lack of Coordination and Implementation Gaps	Departments lacked synchronization.
Decline in Academic Performance	Students struggled with concept-based exams.
Preference for Traditional Curriculum	Students preferred clarity and structure.
Rejection of Integrated System	Majority advised against its continuation.
Conditional Acceptance for Future	Few saw potential if properly managed.

Thematic analysis revealed seven major themes and subthemes:

Theme 1: Overwhelming Transition.

Subtheme: Students reported initial confusion and emotional distress.

Most students described their first-year experience as "confusing" and "stressful." The sudden introduction of integrated teaching without a clear orientation led to uncertainty about how to study effectively.

"We didn't know how to study – everything felt mixed up." (P3)

"At first, I couldn't understand what to focus on; everything seemed scattered." (P1)

The initial months were described as a period of *adjustment and frustration*, with several students admitting to feeling "lost" and "under pressure."

"We were told about integration but not how to handle it. It felt like jumping into deep water without learning to swim." (P4)

Theme 2: Academic Stress and Workload.

Subtheme: The dense curriculum caused continuous pressure.

Students consistently reported that the integrated curriculum resulted in a heavier workload, frequent assessments and limited time for revision or rest. To learn continuously and with speed left many feeling overwhelmed.

"There's always something to study – no break at all." (P6)

"Before one test ends, another is already announced. It's mentally tiring." (P9)

"I wanted to understand, but the schedule didn't allow time for proper learning." (P7)

Theme 3: Lack of Coordination and Implementation Gaps.

Subtheme: Departments lacked synchronization.

A prominent concern among participants was the lack of synchronization among different departments. Students observed that some topics overlapped unnecessarily, while others were skipped entirely.

"Two teachers taught the same topic differently." (P2)

"Sometimes anatomy was ahead of physiology, and we couldn't link the concepts properly." (P5, P11)

"If teachers planned together, we could see the connections clearly. Right now, it feels disorganized." (P8)

Theme 4: Decline in Academic Performance

Subtheme: Students struggled with concept-based exams.

Many students expressed disappointment with their examination results, stating that despite studying hard, their scores were lower than expected. The cross-disciplinary nature of integrated assessments was unfamiliar and students found it difficult to link concepts from multiple subjects in one question.

"I studied a lot but couldn't perform in integrated MCQs." (P8)

"Even after preparing, I didn't know what kind of questions to expect." (P9)

"My marks went down, and I started doubting myself." (P3)

Theme 5: Preference for Traditional Curriculum

Subtheme: Students preferred clarity and structure

Several students expressed a preference for the traditional, subject-based curriculum, describing it as more organized, clear and easier to follow. They felt that the traditional system allowed focused study and provided a better sense of progression.

"The old system was clearer and easier to follow." (P5)

"At least we knew what to study for each subject. Integration makes everything confusing." (P10)

"In the old system, I could concentrate on one subject at a time. Now everything is mixed, and it's hard to manage." (P2)

Theme 6: Rejection of Integrated System.

Subtheme: Majority advised against its continuation.

A majority of students strongly opposed the continuation of the ICS in its current form, citing mental tiredness, poor results and lack of clarity in expectations. Many expressed frustration and demotivation, suggesting that integration had reduced their overall interest in studies.

"I would not want juniors to go through this stress." (P10)

"It feels like we are part of an experiment that isn't working." (P6)

"If teachers don't understand it properly, how can students benefit from it?" (P4)

Theme 7: Conditional Acceptance for Future.

Subtheme: Few saw potential if properly managed.

A smaller group of students recognized potential benefits of the integrated curriculum if better planning and coordination were ensured. These participants acknowledged that integration could enhance conceptual understanding and clinical relevance if implemented properly.

"Integration makes sense when subjects actually connect – that part I liked." (P1, P9, P7, P11)

Discussion:

The introduction of the Integrated Curriculum System (ICS) at CMH Kharian Medical College made a major shift from the traditional subject based approach to a more student centered and clinically oriented model. This study explored how first-year MBBS students perceived and adapted to this transition, focusing on their academic, emotional and experiential responses. The findings revealed that although the aim of integrated curriculum is to promote deeper learning and relevance to clinical practice, but during its early implementation phase it has a lot of significant challenges for both learners and faculty. In our study seven major themes emerged, reflecting the complexities of students' experiences.

The first and most prominent theme was the overwhelming transition that students faced while entering the integrated system. Many described feelings of confusion, frustration and emotional distress, especially during the initial months. The integrated system required a new way of thinking and studying that linked concepts across disciplines instead of memorizing isolated subjects. Without adequate orientation or structured guidance, students felt lost. Similar findings have been reported in studies conducted by Aziz et al., where students transitioning to integrated curricula experienced uncertainty and anxiety due to lack of clarity in expectations and learning outcomes.[14] In addition, many students felt that this lack of coordination among departments and unclear assessment strategies led to decline in their academic performance. Despite putting in too much efforts, they found it difficult to connect concepts across subjects and perform well in integrated exams. This indicates that without proper alignment between teaching, learning and assessment strategies, integration may create confusion instead of creating meaningful understanding.[15] According to some participants, the reason to their less examination scores is the difficulty in answering integrated questions. Students described that they are struggling hard to apply concepts from multiple subjects in one context, especially in integrated MCQs and short answer questions. The possible reason for this may be the misalignment between teaching methods and assessment strategies.[16] This finding is consistent with prior researches suggesting that when students are not sufficiently trained for analytical and integrated exams and thinking skills, their initial performance in such exams may drop.[17,18]

In the traditional system, students were used to studying separate subjects with clear boundaries and familiar exam patterns. When the new integrated tests were introduced without proper orientation or teacher guidance, students were not ready for the new way of thinking these tests required. Because different departments did not plan their teaching together or set common learning goals, students had to connect ideas on their own, which caused confusion, stress, and poor results. Similar problems have been reported in South Asian studies, where students shifting to an integrated system showed lower marks and reduced confidence in the first few semesters.

Many students in this study expressed a strong preference for the traditional subject based system because it felt more structured and organized. They found it easier to focus on one subject at a time. This response is understandable, it's natural that students always try to prefer familiar and predictable learning environments, especially when the new system is uncertain or unclear. Previous research by Patel et al. has also shown that first-year medical students often miss the traditional model for its simplicity and lower mental load.[19] Because in traditional curricula, students are used to clear subject boundaries and familiar exam patterns. By a sudden switch to an integrated system without proper orientation or faculty guidance, many students feel confused and unprepared. Since departments were not well coordinated and teaching timelines did not match, students had to make connections on their own, which is the main reason of increase spells of anxiety and stress and affected their performance.[20] Similar findings by David Bull (2025) also shows that students often experience lower grades and reduced confidence during the early time period of integration.[21]

So a sense of frustration and even rejection of the integrated curriculum has been seen by many students in its current form. And the reason behind all this is due to lack of coordination, unclear expectations, mental fatigue and poor academic results. This shows that there is a need for successful curriculum reforms not only just to change the structure but it also requires teachers to be prepared and confident in new teaching methods. Faculty must understand and support the integrated system for it to work well. If teachers are unsure or teach in different ways, students start to lose trust in the system and see it as confusing or unplanned.[22,23] Finally, regular student feedback mechanisms should be built into the curriculum system to identify issues early and to encourage joint responsibility for learning.

This finding serves as a warning for institutions undergoing similar transitions: implementation without adequate faculty preparation and support can lead to resistance and poor outcomes, even if the curriculum design itself is sound. Faculty training, pilot testing, and periodic feedback cycles are essential to refine the process and maintain trust among learners.

Conclusion:

The Integrated Curriculum System at CMH Kharian Medical College, though conceptually progressive, appears to have negatively impacted first year MBBS students' performance and emotional well-being due to inadequate planning and support. The study revealed that the sudden shift to the Integrated Curriculum System created confusion, stress and academic challenges for first year MBBS students. Many struggled to adjust to the new learning style and assessments due to poor coordination among departments and lack of guidance. Despite these difficulties, some students acknowledged the integrated system to improve their understanding and clinical relevance if implemented properly. Therefore, successful adoption of ICS requires gradual transition, faculty development and consistent communication between teachers and students to ensure a smoother and more effective learning experience.

Limitations and Future Recommendations:

As the research was conducted in a single medical college, the findings may not fully reflect the experiences of students in other institutions. Future research should include students from multiple institutions to allow broader comparison and validation of findings.

Faculty perspectives about ICS was not studied. It is also recommended to include faculty and administrative perspectives to better understand the challenges of implementing integrated curricula and to design more effective orientation and support systems for both students and teachers.

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