FACULTY PERCEPTION REGARDING INTEGRATED CURRICULUM AT UNDERGRADUATE LEVEL: A QUALITATIVE STUDY

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ABSTRACT

Objective: To explore faculty perception regarding theme-based Integrated Curriculum at a private medical College.

Study Design: A qualitative study.

Place and Duration of Study: Private Medical College at Islamabad, from Jul 2017 to Nov 2017.

Methodology: After taking consent, interviews of 18 faculty members of basic and clinical sciences of same institution, directly involved in teaching/assessment were conducted. Five major themes were developed: utility of curriculum; students learning; faculty collaboration & capacity building; curriculum alignment with the outcomes, and barriers in its implementation interviews were audio taped, later transcribed and analyzed by thematic analysis.

Results: Thematic analysis recognized that participants agreed on the fact that interdisciplinary teaching and early clinical exposure would be necessary to provide optimum patient care. Both the clinical and basic science faculty were of the opinion that curriculum mapping and faculty collaboration is needed to produce competent graduates. In order to develop professionalism, analytical thinking, deeper level of understanding and more clinical relevance in students, learner-centered techniques could be applied that not only captures students' attention but also creates further interest in learning.

Conclusions: Faculty declared it as a positive experience. Integrated curriculum involves improvement in diagnostic, cognitive and psychomotor skills of students and motivation of teachers to work as a team.

Keywords: Faculty perceptions, Integrated curriculum, Qualitative feedback, Undergraduate medical curriculum.

INTRODUCTION

Over the past few decades integrated curricula has been introduced in undergraduate medical education with an aim of producing competent doctors[1-3]. In traditional teaching basic science subjects are taught in isolation and no correlation exists between basic and clinical science subjects as well[2]. British Medical School has been criticized in the report "Tomorrow's Doctors: Recommendations on Undergraduate Medical Education", for overburdening students with factual information and recommendations emphasized that medical course should promote critical understanding of the core knowledge[4]. The World Health Organization has also reinforced competency-based education at undergraduate level[5]. The aim of Integrated curricula is to facilitate deeper level of understanding across subject through interrelated thematic study[2].

Previous studies have revealed that a majority of faculty and students valued the 'integrated program' to be a successful effort for perception of interrelating concepts in health and disease[6,7]. Although faculty perceived that vertically integrated teaching methodology was better than the traditional teaching, they also felt that clinical relevance was over emphasized due to which the students suffered in grasping some of the basic physiological concepts[3]. Faculty members felt that the integrated program might not be helpful in performing better in the professional examinations[8]. This notion mainly resulted from a mismatch between the delivery and assessment. If the assessment was subject based and not in line with curricular change, it was bound to create confusion[8,9]. Literature

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revealed that undergraduate medial curricula was criticized for being fragmented and students were required to develop learning behavior based on passive acquisition of knowledge rather than exploring new concepts[9].

A lot of attention has been given to the students' perspective about the integrated curriculum but very few studies have looked into perspective of the other stakeholders such as the teaching faculty. Capacity building of the faculty to implement the new system has been a major challenge for medical institutions. Some of the senior faculty members found it difficult to adjust; they feel that their departmental domains were being threatened by integration[8].

In this context, Faculty feedback is a valuable source of information for taking measures regarding curricular reform, resource allocations, and improvement in the teaching–learning cycle. This study would help in exploring faculty response towards changing curricular demands as the faculty viewpoints about the integrated curriculum have not been explored in depth. Hence, the objectives of this study were to explore the faculty perceptions about integrated curriculum for evaluating academic programs in order to promote positive and desirable improvements in the existing undergraduate curriculum and to provide recommendations for its implication. Their suggestions would also help to devise effective teaching strategies and pave the way for making teachers better professionals.

METHODOLOGY

This study was carried out in a private Medical Institute of Islamabad from July 2017 to November 2017. After taking formal approval from Institutional Review Board (IRB), total undergraduate teaching faculty members both male and female, Assistant professors and above of Basic and Clinical Sciences were counted, they were fifty two in number and out these who fulfilled the inclusion criteria of purposeful sampling i.e Assistant professors and above, having more than five years undergraduate teaching experience and are directly involved in curriculum planning, implementation, assessment and evaluation of curriculum and are volunteer to participate in the study were selected for the study. They were 18 out of 52 and no drop out was noted.

Informed written consent (having complete detail of purpose of study) from the participants was taken by medical educationist, not involved directly in teaching the undergraduate course content to the students. Semi-structure interviews of these 18 faculty members were conducted in an informal setting and maximum variation strategy was applied to collect qualitative data in order to understand the faculty member's point of view regarding integrated curriculum development, implementation and evaluation. The constructivist approach[10] was employed, which had an advantage of providing a multiple range of opinions from both respondents and the researcher's standpoint.

Both male and female Basic and Clinical sciences teaching faculty members were identified based on their involvement in undergraduate-teaching. Both traditional teachers as well as those trained in medical education and having good communication skills were selected in order to explore their perception in depth. Their profile and students anonymous feedback were taken into account for this selection process. Visiting faculty members were excluded from the study. All the interviews were conducted by the Principal Investigator (myself), and a medical educationist (as an independent observer) in a comfortable environment. Total 10 participants were selected from basic sciences, seven females and three males. In clinical side four males and four females opted for participation in the research study. The participants of basic sciences were given pseudonyms of B1, B2, B3 and similarly for clinical sciences C1, C2, C3 to ensure anonymity. Participation was on voluntary basis having the option of withdrawing from interview even after signing the consent form. Before conducting the interviews relative basic information about the interview process and "interview guide" was discussed in detail and their apprehensions

regarding the confidentiality of given information and their trust on interviewer (myself) were also addressed. The interviews were semi-structured and started with predefined questions but in

Table-I: Faculty perceptions on identified themes and related subthemes.

1: Utility of Integrated Curriculum:
To meet patient's expectations& to achieve required outcomes.
Clinical faculty were of the opinion that graduates passing through integrated system can effectively communicate with the patients and would be able to use new techniques in evaluating patients.
B2 respondent commented that"after identifying the exit competencies with relevant outcomes in curriculum patient satisfaction and safety would improve."
2: Students Learning:
2.1 Student's direct their own learning& early patient exposure,
The respondents were of the view that multiple strategies enhance concept making and correlation of basic knowledge with its applied aspect.
C3 respondent stated that "In preclinical years student's response towards integrated curricula is not much different from traditional one but there is a gross difference in response in clinical years during clerkships".
Both the basic and clinical faculty mentioned that induction criteria should be revisited. Students' academic grades and background matters in developing cognitive skills.
Majority of the participants agreed that active learning strategies utilized to implement such type of curricula like Team-based learning (TBL), flipped class rooms, students' seminars/presentations, Case based discussions (CBDs) are very helpful to develop their cognitive and non-cognitive skills.
B5 stated that "Student-centered techniques encourages experiential & life- long learning skills in graduates."
C2 indicated that "In preclinical years, once seeing and interacting with the patient of specific case, unforgettable memorization is achieved which facilitates their concept building during clinical rotations and clerkships."
Clinical respondent, C4 suggested that "in preclinical year's use of 'Simulated patients' or manikins is a better option in order to link basic concepts with its application".
C5 observed that "Early exposure to patients has created "a real life situation" in our passing graduates which is valuable".
By using patient exposure reinforcement of ethical aspects, professionalism and team building can practically be done.
3: Role of Capacity Building:
3.1: In planning collaborative activities:
Basic sciences faculty gave the suggestion that knowledge update should be mandatory for every faculty member.
B2 & B4 specified that for effective teaching, structured feedback from the faculty at the end of each module/clerkship would be helpful to improve the curriculum implementation in its true spirit.
C6 explained that "due to increased workload, it is difficult for the untrained clinical faculty to deliver the content according to its requirement".
4: Does Curriculum Evaluation Reinforces Achievement of Its Outcomes?
4.1: student's performance in assessment:
B7 recognized that "student's performance during end modules/clerkships was reflective that we are achieving our set goals".
Reinforcement of our standardization was also verified from reliability and validity of assessment scores.
Basic science faculty suggested that in order to make it more transparent 'curriculum mapping' should be done more accurately.
Faculty pointed out that student's participation in seminars/conferences reflects that we are achieving our targets.
They recommended that in order to create cognitive interaction curriculum should be revisited by each department critically.
5: Barriers in Implementation of Integrated Curriculum:
5.1: Faculty related issues:
C7 declared that "there are major ego-related issues among several faculty members which results in lack of team work".
C2 stated that "due to workload of OPDs few of the faculty members take teaching as a secondary task".
Clinical faculty detailed that financial incentives can increase the external motivation of facilitators.
Both stressed on the need of mentorship or student support program for better cooperation between faculty & students.
5.2: lack of resources:
Clinical faculty exposed that lot of financial resources are still required for proper implementation of strategies used in integrated system.
Both the basic and clinical science faculty mentioned logistics problems during end module/clerkships exams.
Faculty revealed that they are facing issues with the IT support, Moodle (Learning Management System), which makes it difficult to run the system smoothly.

between there were probing questions that were not leading in nature. All interviews were in English language so that no information could be lost in translating. The interviews were recorded and later transcribed to ensure accurate reporting of the information. The transcriptions were then reviewed by the participants. Faculty gave their opinion about relating the graduates' outcome with patient care and ways to improve patient satisfaction. Correlation of cognitive and non-cognitive skills with curriculum design was also discussed in detail. Agreement of both basic and clinical sciences faculty on the role of capacity building and its impact on student's learning was also noted. Barriers in implementation of integrated curriculum at undergraduate level were also highlighted by both the members. Their recommendations would promote positive and desirable improvements in the existing undergraduate curriculum. Their suggestions would also help to formulate effective learning strategies and pave the way for making teachers better professionals.

After transcribing audio recordings of interviews, qualitative thematic analysis[11] was done through data reduction followed by data organization in matrices. Identifying themes and subthemes and calculation of their frequencies was done for reporting purposes.

RESULTS

Various themes were identified after thematic data analysis of faculty (both basic and clinical sciences) perceptions. Prevalent themes regarding integrated curriculum included: 1) Utility of the curriculum, 2) Students learning, 3) Role of faculty training, 4) standardization of given content and 5) barriers in implementation and evaluation.

Table-I showed the faculty perceptions on identified themes and related subthemes. They supported that breaking down the boundaries between basic and clinical subjects' enhanced cognitive and non-cognitive skills and retention of knowledge in our graduates. They also emphasized on curriculum mapping and faculty training to teach the spiral curriculum. Faculty perceptions were evaluated in terms of deficiencies in curriculum development, student's performance, faculty learning and obstacles faced during the implementation of student-centered teaching strategies. Majority of faculty showed satisfaction on better performance of students in module/clerkships assessments. Recommendations to assess the effectiveness of curriculum by various evaluation models and to prepare the students to meet the challenges of constantly evolving field were also identified.

Table-II: Frequency of themes & subthemes as perceived by the faculty.

Themes	Subthemes	Response (n)/%
Utility of integrated curriculum	To meet patient's expectations	15 (83)
	Achievement of outcomes.	18 (100)
Students learning	Student's grip on the subject	10 (55)
	Students direct their own learning	09 (50)
	Experience with early patient exposure	13 (72)
Role of Capacity building	In planning collaborative activities	15 (83)
	Lack of training	11(61)
Curriculum evaluation	Meets the required standard	10 (55)
	Student performance in assessment	09 (50)
Barriers in implementation of integrated curriculum.	Faculty related	07 (38)
	Lack of resources.	18 (100)

Value in n (%)

Table-II showed the frequencies of identified themes and subthemes as they appeared in the data obtained. Besides lack of required resources, faculty collaboration and team work showed that by promoting active learning techniques and early patient exposure, required outcomes could be achieved.

Figure-1 showed faculty profile; a total of 18 members participated in the study out of which 11 were females and 7 were males aged between

36-60 years. Ten members were trained in medical education and their teaching experience varies between 5 to 15 years.

DISCUSSION

Innovations in integrated curriculum have been implemented globally[12]. In the spiral model, integrated curriculum can be defined as "a fully synchronous, trans-disciplinary delivery of information between the foundational sciences and the applied sciences throughout all years of a medical school curriculum"[13]. It occurs when curriculum components are combined in meaningful method by both the students and facilitators[14].

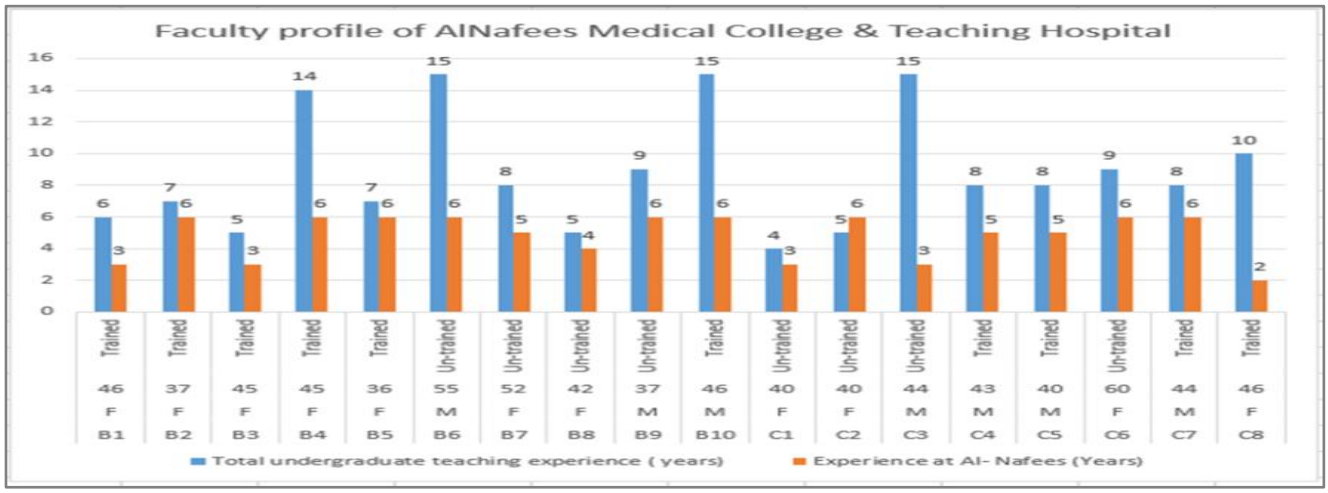

Figure: Faculty profile of al-nafees medical college & teaching hospital.

Recent curriculum designs are inclined to put emphasis on integration, development of exit competencies, and training of physicians to adapt to growing technology and patients' expectations[8]. Richard Hay's 15 in his study indicates the potential consequences of the changes for making decisions about the quality of medical education and Casey White[16] indorsesactive learning techniques to ensure deep learning and higher order assessment because there is growing public demand and awareness about patient rights for a skilled doctor who is not only responsible for his competence but also for professionalism and good communication skills. Our results also revealed that in the faculty's opinion, students graduating through integrated curriculum could communicate effectively with the multiple health care providers, and were able to evaluate new diagnostic skills for optimum patient care, thus developing 'life- long learning' skills. These "Lifelong learning skills" development among students have been known to help them in self-regulation and taking responsibility of their learning[8]. Literature also acknowledges that concepts like 'systems based practice', 'practice based learning' and 'professionalism' are being highly recommended to improve the safety and quality of patient care. In order to internalize such concepts, a training that develops a physician who reflects himself as an important constituent of health care delivery system is needed[8,17].

Our results disclosed that in the integrated curriculum there is close collaboration between basic & clinical sciences which allows students to draw a parallel between their basic concepts, helping them in dealing with clinical problems. Starting Patient exposure with from first year MBBS according to the themes of every module has brought about positive results. This strategy can provide a link between the subjects in order to bridge the gap between pre-clinical & clinical years and to increase students' motivation from the beginning. Study conducted by Senti *et al* suggested that the ideal way to increase the link between both specialties is curricular integration,

which could be achieved either by use of interdisciplinary block courses in pre-clinical years that would blend basic, clinical, and social sciences into one course, or by developing longitudinal curricular themes across the curriculum[18]. Several strategies can be implemented to achieve this objective and medical education literature has reported many successful examples[19-21]. In reality, the usage of health problems of high prevalence, clinical logic, and interdisciplinary learning potential has been suggested to introduce basic science concepts and to achieve better understanding of basic subjects. This theme-based approach can be beneficial for the students in the long run. Our faculty also stated that use of multiple strategies like 'Team Based Learning', 'Case Based Discussions' while teaching improves their clinical reasoning skills and they believe that use of manikins or simulated patients during interactive sessions is a better option in order to link basic concepts in preclinical years.

Faculty pointed out that integrated approach facilitates contextual and applied learning that promotes effective clinical reasoning which can only be achieved by collaborative interdisciplinary leadership. Challenges faced by the faculty during course planning and implementation has also been mentioned in studies done by Kayani and Adhikari[6,7] where the role of teamwork during development of clinical cases, supervision of wrap-up sessions and evaluation process has been emphasized. Focusing each step of the development and implementation process can avoid any feeling of superiority of clinical over basic facilitators or vice versa[7,18].

Both basic and clinical science faculty pointed out that information presented without robust cross-links and ties to clinical applications, and in isolation from related subject matter, makes it difficult for students to recall after the transition to clinical clerkships[14,22]. Results of the current research points out that assessment results of our students reflects the effectiveness of adopting integrated approach. Evaluation of assessment records also reinforces that main objective of integration is to develop effective learning in students and to provide them the opportunity to become true healer. Alexander Tsang reiterates that learning is enriched when it is meaningful, relevant and learned in the context in which it can be recalled later[8]. Clinical faculty revealed that due to increased workload of patients and deficiency of resources, development of competitive environment by the use of modern technology in order to motivate the students has been very challenging. They also mentioned that inadequate knowledge and attitude regarding clerkship planning and implementation which may be due to lack of interest, team work, guidance and training workshops, effective teaching techniques cannot be applied.

This barrier is also reported by Syeda Kauser in a study conducted at Aga Khan University, Pakistan that curriculum redesigning is a strenuous, tiresome, persistent, and time taking, energetic activity for which faculty have to bear in mind all the outcomes, logistics, resources and limitations from students, facilitators and administrative point of view[23].

Limitations of this study include the fact that it was conducted in a single private medical college, therefore, generalizability cannot be ensured but can be pertinent in related contexts and similar socioeconomic background. Study was conducted in a limited time frame and impact of the institutional environment on the faculty responses also cannot be ruled out.

RECOMMENDATIONS

On the basis of these findings our study forwards the following recommendations:

The students' induction process needs to be revisited.

Faculty training workshops on team work need to be an ongoing activity.

Provision of required resources and technical support should be taken as a priority by the management of the institution.

Financial incentives to the work force can be introduced to improve those involved in teaching.

Student support/mentorship programs should be introduced to provide a supportive leaning environment.

Continuous monitoring of implemented curriculum can help identify weaknesses and rectify these without affecting student performance.

Disclosure

The research as a part of my MCPS is Health Professions Education (HPE) under supervision of CPSP.

CONCLUSION

Faculty declared that their participation in this research study was a positive experience. Faculty members perceived that integrated curriculum involved improvement in diagnostic, cognitive and psychomotor skills of students as well as motivation of teachers to work as a team. It allowed students to categorize the relevance of basic sciences for dealing with clinical problems. Results of this study can also be helpful in identifying the difficulties in achieving required competency level in our graduates. This study also suggests that more time should be dedicated to developing lifelong learning skills instead of content coverage.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Burge SM. Undergraduate medical curricula: are students being trained to meet future service needs? Clin Med 2003; 3(3): 243-47.
2. Rehman R, Iqbal A, Syed S, Kamran A. Evaluation of Integrated Learning Program of Undergraduate Medical students. Pak J Physiol 2011; 7(2) 37-41.
3. Shafi R, Quadri KHM, Ahmed W, Mahmud SN, Iqbal M. Experience with a theme-based integrated renal module for a second year MBBS class. Adv Physiol Educ 2010; 34:15-9.
4. General Medical Council. Tomorrow's doctor: Recommendations on Undergraduate Medial Education London. General Med Council 1993.
5. Naqvi AS, Fatima S. Hybrid Semester System in MBBS Program-Ziauddin Medical College Experience. Pak J Med Dent 2015; 4(1): 78-80.
6. Dashputra A, Kulkarani M, Chari S, Manohar T. Perception of Medical Teachers toward Present Day Medical Education. Int J Edu Sci 2012: 4(2); 91-5.
7. Kiyani ZA, Gilani I. Perceptions of medical teachers about integrated curriculum. Adv Health Prof Educ 2016; 2(1): 30-7.
8. Tsang A, Harris D M. Faculty and second-year medical student perceptions of active learning in an integrated curriculum. Adv Physiol Edu 2016; 40(4): 446–53.
9. Byme E, Brugha R, Clarke E, Lavelle A. Peer inter-viewing in medical education research: experiences and perceptions of student interviewers and interviewees. Bio Med Center 2015; 8(1): 513.
10. Mahboob U, Evans P. Assessment of professionalism in integrated curriculum: The faculty's Perspective. J Coll Physicians Surg Pak 2013; 23(11): 771-4.
11. Ashar A, Ahmad A. Developing Professionalism Dental Students' Perspective. J Coll Physicians Surg Pak 2014; 24(12): 902-7.
12. Bandiera G, Boucher A, Neville A, Kuper A, Hodges B. Integration and timing of basic and clinical sciences education. Med Teach 2013; 35(5): 381-87.
13. Brauer DG, Ferguson K J. The integrated curriculum in medical education: AMEE Guide No. 96. Med Teach 2015; 37(4): 312–22.
14. Olopade FE, Adaramoye OA, Raji Y, Fasola AO, Olapade-Olaopa EO. Developing a competency-based medical education curriculum for the core basic medical sciences in an African Medical School. Adv Med Educ Pract 2016; 7(1): 389-98.
15. Hays R. The potential impact of the revision of the Basic World Federation Medical Education Standards. Med Teach 2014; 36(6): 459–62.
16. White C, Bradley E, Martindale J, Roy P, Patel K, Yoon M, et al. Why are medical students 'checking out' of active learning in a new curriculum? Med Educ 2014; 48(3): 315–24.
17. Nagler A, Andolsek K, Dossary K, Schlueter J, Schulman K. Addressing the systems-based practice requirement with health policy content and educational technology. Med Teach 2010; 32(12): 559–65.
18. Senti M, Miralles R, Bigorra J, Girvent M, Minguella J, Samso E, et al. A Collaborative project to bridging the gap between basic and clinical teachers: The Opinion of Medical Students. Bio Med Educ 2015; 1(1): 1-9.
19. Goldie A, Dowie P, Morrison CJ. Teaching professionalism in the early years of a medical curriculum: A qualitative study. Med Educ 2007; 41(6): 610-17.
20. Howe A, Dagley V, Hopayian K, Lillicrap M. Patient contact in the first year of basic medical training-feasible, educational, acceptable? Med Teach 2007; 29(2-3): 237–45.
21. Von Below B, Hellquist G, Rodjer S, Gunnarsson R, Bjorkelund C, Wahlqvist M. Medical students' and facilitators' experiences of an Early Professional Contact course: Active and motivated students, strained facilitators. Bio Med Center 2008; 56(8): 1-11.
22. Muller JH, Jain S, Loeser H, Irby DM. Lessons learned about integrating a medical school curriculum: perceptions of students, faculty and curriculum leaders. Med Educ 2008; 42(8): 778-85.
23. Ali KS, Baig L. Problems and issues in implementing innovative Curriculum in the developing countries: the Pakistani experience. Bio Med Center 2012; 12(31); 1-8.