ORIGINAL RESEARCH ARTICLE

COMPARISON BETWEEN INTEGRATED TEACHING LEARNING PROGRAM AND TRADITIONAL TEACHING LEARNING PROGRAM IN THE PRECLINICAL SUBJECTS: PERCEPTION OF THE STUDENTS AND THE FACULTY.

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Abstract:

Background:

The traditional teaching learning process is compartmentalized into different subjects, resulting in the subject being less grasped and learnt. Integration is known to increase effectiveness and efficiency of the teaching-learning process. The present study was conducted to compare the effectiveness of integrated teaching learning process over the traditional method and also to elicit the perception of the students and the faculty.

Methods and Results:

150 first year MBBS students were randomly divided into 2 groups. Group I (n=75) was exposed to the integrated teaching-learning method and group II (n=75) was exposed to the traditional teaching-learning method. The evaluation was done by multiple choice questions (MCQs). Student and faculty feedback & free comments were collected. Data was analysed by using SPSS 20.0

software. Data was expressed as mean & standard deviation. An Independent sample t-test was applied for significance. Students and faculty showed a more positive perception towards

the integrated teaching-learning program in comparison to the traditional teaching-learning program and it was statistically significant.

Conclusion:

Integrated Teaching Learning Program in the medical curriculum would fulfil the aim of bringing out medical doctors with a holistic approach toward the patients and the community while practicing medicine.

Keywords: Integrated, Learning, Perception, Teaching, Traditional.

Introduction:

The goal of the Competency-Based Medical Education (CBME) curriculum as proposed by NMC, is to create an Indian Medical Graduate (IMG) who shall possess the requisite knowledge, skills, attitude, and responsiveness to function as a physician of primary contact of the community, and being globally relevant. The traditional teaching-learning process which is compartmentalized into different subjects allows the student to gain in-depth knowledge of each subject, but in isolation.[1] In the basic sciences, as each subject is taught in different blocks, it is difficult for the students to correlate and integrate the knowledge gained between the same topic in different subjects.[2] The lack of an integrated approach to the different subjects during teaching-learning results in bringing out doctors who lack a holistic approach toward the patients and the community while practicing medicine. [3] Several innovative methods have been developed over the years to address these challenges including various levels of integration of instruction that diminishes and removes boundaries within subjects. [1] Integration is defined as the organization of teaching matter to interrelate subjects frequently taught in separate departments or courses. It entails cooperation and coordination among teachers of different disciplines to teach core topics and increases the effectiveness and efficiency of the teaching-learning process of students. [4] An integrated approach to the teaching-learning of topics in the medical course has been advocated by the General Professional Education of the Physician's report, the General Medical Council of the UK, and the Medical Council of India. [5] MCI states the necessity to integrate the curriculum to the maximum extent possible (both vertical and horizontal) to enhance interest among the students and to enrich student learning. [1].The present study was done to compare and evaluate Integrated Teaching Learning Program (ITLP) and Traditional Teaching Learning Program (TTLP) in the preclinical subjects and also to elicit the perception of the students and the faculty towards ITLP in comparison with TTLP.

Materials and Methods:

Ethical clearance was obtained from the institutional review board and informed consent from the students was obtained.150 first-year MBBS students were randomly divided into 2 groups. The group I (n =75) consisted of the integrated teaching-learning group and group II (n =75) consisted of the traditional teaching-learning. Group I students were exposed to the

integrated teaching program of the Pancreas, by the faculty from the departments of anatomy, physiology, and biochemistry. Group II students were exposed to the teaching about the Pancreas, by the traditional method by the faculty from the departments of Anatomy, Physiology and Biochemistry, in their respective departments, separately according to the department schedule. Following both these teaching schedules, an assessment of both groups was done by administering the multiple choice questions (MCQs). Feedback and free comments were collected both from the students and the faculty to elicit their perceptions about the integrated teaching-learning program and traditional teaching-learning program.

Statistical Analysis:

Statistical data were analysed by using SPSS 20.0 software. The data obtained was entered in Microsoft Excel 2016 and expressed as mean scores and standard deviations. Independent t-test was applied to determine the test of significance. P value < 0.05 was considered to be statistically significant and P value <0.01 was considered to be highly significant.

Results:

Table I: Comparison of MCQ scores among ITLP group and TTLP group

Subjects	ITLP group (n=75) Mean ± SD	TTLP group (n=75) Mean ± SD	Unpaired t-test	P-value and Significance
Anatomy	7.01 ± 0.98	5.12 ± 0.76	t = 13.05	P = 0.000 *
Physiology	7.07 ± 0.88	5.01 ± 0.77	t = 15.02	P = 0.000 *
Biochemistry	7.19 ± 0.95	5.01 ± 0.74	t = 15.55	P = 0.000*
Total	21.27 ± 2.01	15.14 ± 1.31	t = 21.93	P = 0.000 *

***VHS=Very Highly Significant**.

Total marks obtained in the MCQ test were significantly higher in the ITLP group than the TTLP integrated teaching study group and was highly significant statistically.

Student feedback & free comments were collected on a 5 point Likert scale and analysed for statistical significance.

Table II: Comparison of Student's Feedback between ITLP and TTLP by Likert Scale.

Sl. No	Questions	Scores of 5 point Likert Scale		t-test Value	P-Value and Significance
		ITLP	TTLP		
		Mean ± SD	Mean ± SD		
1	I am comfortable and satisfied with this TL method.	3.706 ± 1.152	2.867 ± 0.72	t = 5.32	P = 0.000 *
2	The TL method makes understanding of the topics easy and helps in better retaining of the subject	3.893 ± 1.014	2.741 ± 0.807	t =7.69	P = 0.000 *
3	The TL method improves thinking ability and motivates to study.	3.842 ± 1.073	2.381 ± 0.836	t = 9.22	P = 0.000*
4	The TL method would be helpful for better understanding of clinical concepts.	3.746 ± 1.104	2.413 ± 0.753	t = 8.63	P = 0.000*
5	I expect to score better in this topic in the examination as a result of this teaching learning method.	3.774 ± 1.012	2.562 ± 0.861	t =7.94	P = 0.000*

***VHS=Very Highly Significant**.

Students showed a more positive perception towards the ITLP in comparison to the TTLP and it was statistically highly significant.

Faculty feedback & free comments were collected on a 5 point Likert scale and analysed for statistical significance.

Table III: Comparison of Faculty Feedback between ITLP and TTLP by Likert Scale

Sl. No	Questions	Scores of Likert 5 Point Scale		t-test Value	P-Value & Signifcance
		ITLP	TTLP		
		Mean ± SD	Mean ± SD		
1	I am Comfortable and satisfied with this teaching learning method.	3.891 ± 0.763	3.270 ± 0.572	t = 2.72	P = 0.010 *
2	Time allocated for the session is adequate. Large content was covered in a short time.	3.445 ± 0.92	3.389 ± 0.972	t = 0.175	P = 0.862 **
3	Lectures were interesting, non- repetitive and less confusing.	3.553 ± 0.922	3.501 ± 0.857	t = 0.187	P = 0.853 **
4	The relevance of topic to other branches of medicine was also emphasized.	3.562 ± 0.921	3.444 ± 0.983	t = 0.350	P = 0.729 **
5	Provides a good opportunity for interaction among teachers.	4.102 ± 0.582	4.493 ± 0.511	t = 2.03	P =0.043*

** NS= Not Significant, *S=Significant.

Faculty showed a more positive perception towards the ITLP in comparison to the TTLP.

Discussion:

Graduate Medical Regulations Act 2019 (GMER 2019) emphasizes learning which is competency-based, integrated and student-centered acquisition of skills and ethical & humanistic values. It also emphasizes that integration must be horizontal (i.e. across different departments but within the same phase) and vertical (across departments of different phases). [6] In the present study, the scores obtained by students of the integrated teaching learning group were greater than the scores obtained by students of the traditional teaching learning group. Similar results of better performance of students with integrated teaching, in comparison with traditional teaching, were observed in various other studies. [2, 3, 4]

In the present study, the students exposed to the integrated teaching-learning method expressed satisfaction with their learning as it helped them in better understanding of the topic, better retention, improved thinking ability and better understanding of the application of the knowledge of basic sciences to clinical concepts. Horizontal integrated teaching learning programs in the basic sciences subjects resulted in better performance in the students during their clinical postings. [7] Students trained with an integrated curriculum were more accurate in the diagnosis of clinical disorders than those trained in a conventional curriculum. [8] Integrated teaching improves the cognitive and psychomotor domains of students, creates interest in topics and eliminates the fear toward the subject. [2].Integration during the course period gave the students a better insight into the subjects and improved their outlook towards medicine. [3] In the present study, the faculty members showed a positive perception towards the integrated teaching learning program, in that they were comfortable and satisfied with this method and it provided them a good opportunity for interaction among teachers of other departments. The faculty opined that the integrated teaching-learning program enhanced participation among the students and facilitated cooperation among the staff members of the different departments. [5]Studies by Kate et al show that this teaching-learning method was welcomed with great enthusiasm both by students and faculty. [4]The integrated curriculum is so designed that it fosters interdisciplinary learning, aligning with adult learning principles and focusing on outcome-based objectives. The integrated teaching-learning approach emphasizes learning that applies to real-life situations, which equips the students with comprehensive knowledge for effective patient care. Both vertical and horizontal integration are crucial elements in achieving the desired outcomes in the integrated curriculum framework. [9]

Conclusion:

Integrated Teaching Learning Program (ITLP) is a more effective teaching-learning method than Traditional Teaching Learning Program (TTLP). During the preclinical phase, integration brings relevance to the subjects taught, thereby increasing interest in the subjects. The perception of the students and the faculty towards ITLP is positive. An Integrated Teaching Learning Program (ITLP) in the medical curriculum would fulfil the aim of bringing out medical doctors with a holistic approach towards the patients and the community while practicing medicine.

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