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Perceptions of Postgraduate Medical Students towards Basic Science Subjects in their Curriculum

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Abstract: ***Basic science knowledge is essential to medical practice as, the diagnostic and therapeutic modalities have expanded beyond horizon. Medical curriculum for postgraduates expects them to integrate knowledge of basic science with clinical subjects which have to be highlighted. This study explored the perceptions of postgraduates of our medical college regarding the quality and relevance of basic science classes to their curriculum and their retention of knowledge using questionnaire and paper based assessment. About 73% of the students were unaware of the basic science orientation classes during their post graduation .70% of the students felt that the topics covered during the sessions were relevant to their specialities. 62% of the students gave overall positive feedback on the sessions.80% of the students wanted to suggest certain topics in the sessions. This study emphasizes many aspects of the curriculum the faculty needs to address in order to prepare postgraduates effectively and efficiently for clinical work.***

Keywords: Curriculum, Faculty, Retention, Students

1. Introduction

Medical curriculum for postgraduates expects them to integrate knowledge of basic science subjects with clinical subjects but the process is not always emphasized.[1] Basic subjects are taught in the 1(st) year of MBBS with least interdisciplinary interaction in the conventional system of medical education. Medical educators are concerned as the traditional programs of teaching medical students have not provided better outcomes of learning.[2] To ease the students' transition from the under graduation to post graduation ,implementation of a teaching learning program should give them the opportunity to train their clinical reasoning processes by planning basic science classes, in the early phase of their post graduation . These classes should foster the creation of links between the acquired basic clinical knowledge, the diagnostic, management and therapy steps of a problem. Basic science knowledge remains essential to medical practice, particularly when encountered with the continual advancement in the areas of diagnostic and therapeutic modalities. As studies suggest, basic science knowledge retention tends to reduce across the span of an average medical course and into the early postgraduate years, as preoccupation with clinical medicine predominates. We postulated that perceived relevance, content and need demonstrated through basic science orientation classes assist in retention of basic science knowledge. Studies have suggested that perceived relevance of a subject facilitates knowledge retention and application, while a lack of relevance is associated with the converse of this [3].

2. Materials and Methods

The participants of the study were 74 postgraduate students from all the specialities of our medical college attending basic science classes for a period of 12 weeks immediately after joining post graduation. Perception of basic science classes and retention of knowledge was assessed in this study .To analyze the perception of the basic science classes a questionnaire containing 10 questions. All opinions were rated using a five-point Likert scale, which ranges from "strongly agree" to "strongly disagree. To test the short term retention of knowledge a paper-based assessment comprising of 50 MCQ was conducted at the end of all the basic science classes. The subjects included during the sessions were anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, forensic medicine and community medicine. On an average 6 topics were covered in each discipline over a period of 12 weeks. Filled questionnaires were received back and the response was analyzed.

3. Results

About 73% of the students were unaware the basic science orientation classes during their postgraduation.70% of the students felt that the topics covered during the sessions were relevant to their specialities.58 and 68% of the students felt that the timing and the venue of the sessions was convenient. Majority of the students (85%,92%) felt that the lectures delivered in the sessions and the audiovisual aids used during the sessions were effective.84% of the students felt that active participation was encouraged during the classes.76% of students agreed that their expectation from the sessions was met and 62% of the students gave overall positive feedback on the sessions.80% of the students wanted to replace/suggest certain topics in the sessions as shown in Table-1 and Figure-1.

Table 1: Response Of Postgraduate Students

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No	VARIABLES	SA % (n)	A % (n)	N % (n)	D % (n)	SD % (n)
1	Did you have any information about conducting Basic Science classes before joining PG	5.4 (4)	16.2 (12)	2.7 (2)	72.9 (54)	2.7 (2)
2	How much relevant and useful were the topics selected for the discussion	9.4 (7)	70.2 (52)	1.4 (1)	16.2 (12)	2.7(2)
3	Was the timing convenient for you	18.9 (14)	58.0 (43)	1.4 (1)	20.2(15)	1.4 (1)
4	Was the venue convenient for you	13.5 (10)	67.5 (50)	2.7 (2)	16.2(12)	0 (0)
5	Did you find audiovisual aids effective during the sessions	6.8 (5)	91.8 (68)	1.4 (1)	0 (0)	0 (0)
6	How effective were the lectures	6.8 (5)	85.1 (63)	1.4 (1)	5.4 (4)	1.4 (1)
7	Was your participation /feedback encouraged in the sessions	4.1 (3)	83.7 (62)	2.7 (2)	9.5 (7)	0 (0)
8	To what extent your expectations from the sessions were met	4.1 (3)	75.6 (56)	2.7 (2)	17.6(13)	0 (0)
9	Do you have a positive feedback on these sessions	4.1 (3)	62.1 (46)	0 (0)	31.1(23)	2.7 (2)
10	Do you want to replace or suggest certain topics	0 (0)	79.7 (59)	0 (0)	17.6 (13)	2.7 (2)

*__SA__-StronglyAgree,__A__-Agree,__N__-Neutral,__D__-Disagree,__SD__-Strongly Disagree.

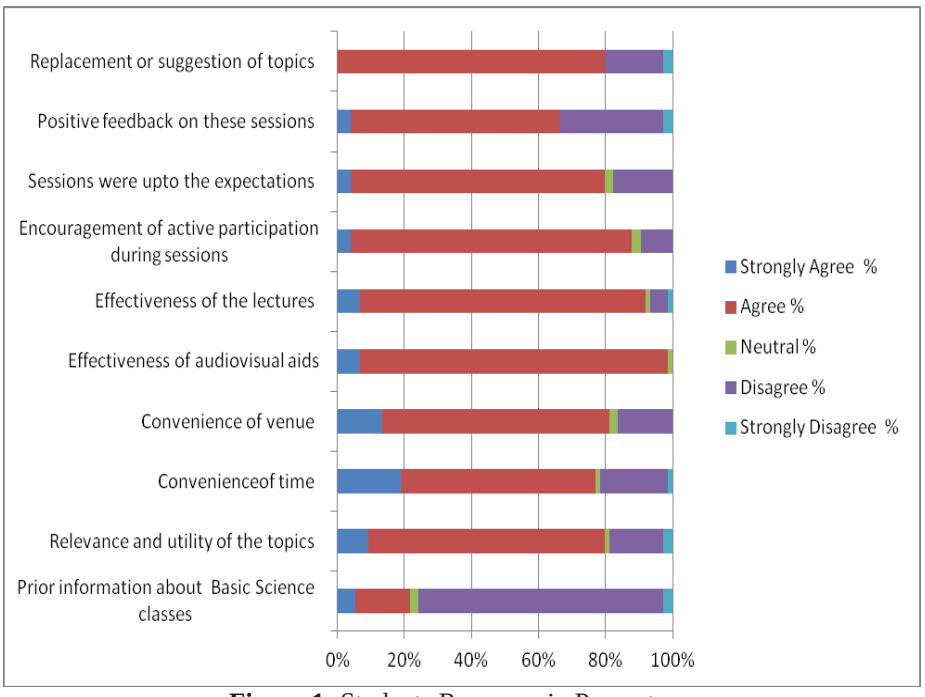

Figure 1: Students Response in Percentage

Students felt that Basic Science courses should be made more clinically relevant .Many of the students believed that physiology, anatomy amongst other Basic Science courses, was the most clinically relevant course. Students suggested that the practical integration of subjects to impart clinical skills, by including problem based learning method. Some of the respondents (5%) suggested that anatomy, biochemistry and physiology curriculum should only cover the general concepts to give the working knowledge of the subject. Students requested for involvement of classes teaching basic skills like suturing, dressing, sample collection.

Out of total 74% of students who appeared for the paper based MCQ examination at the end of the sessions ,5 remained absent .Majority of the students i.e 41 out of 74 students scored 70-80% of marks ,13 students scored between 60-70% of marks ,7 students scored between 50-60% ,7 students scored more than 80%,only one student scored less than 50% as shown in Figure-2 .

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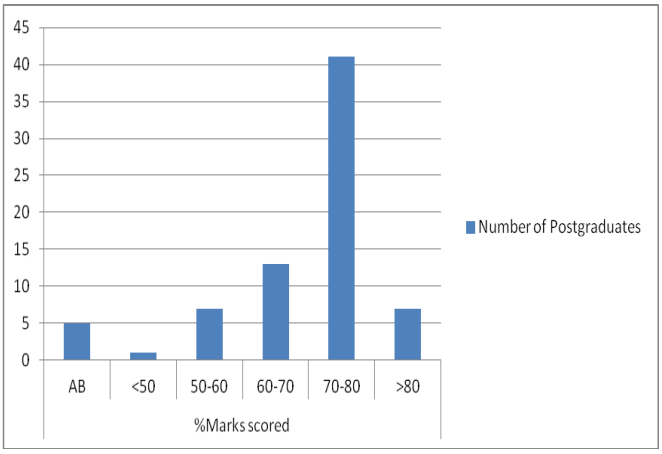

Figure 2: Marks (%)scored by postgraduates

Students scored 95% and 100% in forensic medicine and community medicine subjects and felt difficulty in retaining the knowledge of anatomy(66.6%), biochemistry(71.4%) and microbiology(66.6%) which is reflected in their scores in the paper based assessments as depicted in the average marks(%) scored by postgraduates in the paper based assessment as in Figure-3.

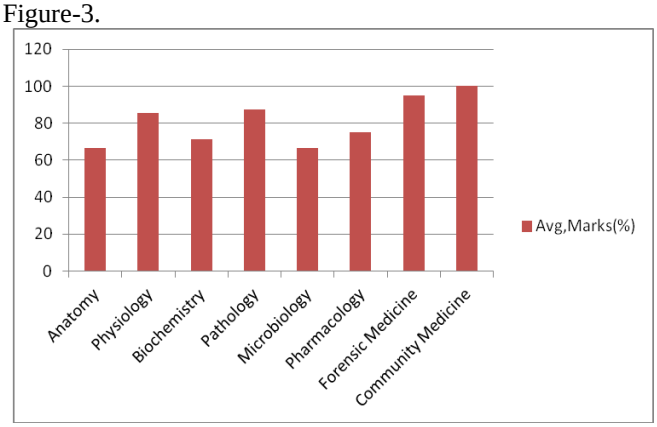

Figure 3: Average marks (%) scored in different Basic Science Subjects

4. Discussions

This study emphasizes many aspects of the curriculum the faculty needs to address in order to prepare postgraduates effectively and efficiently for clinical work. It can be used as a tool to find the impact of curriculum revision activities which are currently underway in our institution. Overall, the attitudes of students towards basic science subjects were positive. By better clinical integration of the subjects the learning experience for the students can be improved significantly. Majority of the students were unaware of reorientation program for the basic science subjects in the postgraduate curriculum which is a part of Medical Council of India guidelines. Here comes the role of effective course content awareness program. Some students felt that the topics included in the sessions were not relevant to their speciality .It is difficult to cover more subject in the given period of time. With this integrated approach, the learner is required to gather information, prioritize according to relevance or importance and filter out irrelevant information [4] Hence if only a particular group of students want some particular topic ,it can be discussed separately in a small group discussion. The classes were planned in the afternoon so that the clinical work is undisturbed in the morning hours, which was acknowledged by most of our students. Convenience of venue and effectiveness of the audiovisual aids during the sessions as expressed by the participants, suggest that better infrastructure and effective teaching learning aids play a very important role in imbibing the knowledge. Majority of the students felt that the lectures delivered during the sessions were effective in transferring the knowledge from the faculty to the students .However some students did mention that certain lectures did not involve active participation of the students. Such a system is teacher centered with minimal active participation from the students.[5Hence more active learning including case based, quiz, group learning can be included to make teaching learning more effective. CBL has been acknowledged as a structured approach to collaborative learning that consolidates and integrates newly acquired knowledge and skills .[6] [7] A number of studies reported from India have emphasized the benefit of case study or PBL for better learning outcomes.[8]-[12] This method would ensure that students acquire the knowledge, skills and attitudes required for maintaining educational standards, while also allowing them to take more responsibility for their own learning.[13].Certain basic skills which are discipline based can be included and dealt in a small group demonstrations. Majority of the students have scored more than 70% of marks in the examination held at the end of the sessions, suggesting better short term retention of the knowledge acquired. This study suggests that perceived clinical relevance is an important contributing factor to the retention of basic science knowledge. Knowledge that is not of use or clinically irrelevant becomes inert and inaccessible [14] [15].It requires greater coordination among different basic and clinical departments and a motivated faculty committed to improvement in standard of medical education.[16]Hence applied basic science teaching becomes the pivotal point throughout the medical course.

5. Conclusions

By better clinical integration of the subjects the learning experience for the students can be improved significantly. Motivated faculty working in coordination with others and with students can significantly influence the medical postgraduate curriculum.

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