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INTRODUCE, IMPLEMENT & EVALUATE EFFECTIVENESS OF STRUCTURED TEACHING FOR PRACTICAL TRAINING OF LIVING ANATOMY

Anatomy

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ABSTRACT

Introduction: Purpose of teaching Anatomy must lie in its clinical application. The design of Anatomy course must include opportunities for students to do practical under supervision. The Undergraduate Medical Education curriculum in India is moving its focus from knowledge to competency-based education; hence the assessment of students' competencies while teaching & learning Living Anatomy becomes an integral part of the medical education. Hence this project was undertaken to know the effect of structured teaching & assessment for practical teaching of living anatomy.

Methodology: The study was conducted as an educational interventional study at Department of Anatomy, Bharati Vidyapeeth (Deemed to be University). Medical College, Sangli. Initially, students were exposed to teaching by traditional method & their assessment was done by structured method. Later students were taught by structured method followed by structured assessment. The scores were compared by Likert's scale & perception of students as well as faculty was noted.

Result: Majority of the students, i.e. almost 85% students showed improvement in giving in proper information for the task & also almost 87% of them performing tasks well during Living Anatomy practical. Majority of students as well as faculty either agreed or strongly agreed that the new structured teaching & assessment method helped to prepare the students better for their practical examination of Living Anatomy with improvement in scores.

Conclusion: Structured teaching followed by structured assessment appeared to be helpful in improving the student's performance for demonstration of practical skills in Living Anatomy Practical.

KEYWORDS

Living Anatomy, Practical Skills, Structured Teaching, Structured Assessment

Introduction:

Traditional medical curriculum in India is disciplined based & teaching has made clear cut demarcation between basic medical & clinical sciences. It is also very true that comprehensive medical education involves increased correlation between basic science knowledge & its clinical application[1].

Anatomy is a keystone in medical education for hundreds of years. Anatomy remains the constant and consistent bridge between basic medical sciences and clinical medicine. It provides the platform of knowledge indispensible to all the branches of medicine. The format of teaching anatomy in terms of contents & methods has evolved & changed considerably over last two decades along with changes in the demands of medical profession.[2]

The visible and palpable Anatomy that forms the basis of clinical examination can only be learnt through practice on normal subjects, usually fellow students and on oneself. Correlation of the knowledge with practical enhances deeper learning.

A traditional teaching doesn't emphasis the psychomotor skills to be achieved by the students during the practical teaching. So the students can't correlate the basic & clinical science. They lack confidence to apply the knowledge of basic subject for clinical examination. This results in poor learning & performance at Living Anatomy Practical by 1st year MBBS students. This further can result in poor ability of students to perform practical tasks related to surgical & medical procedures in subsequent years. Moreover students are unaware of communication skills. Traditional teaching does not emphasis the psychomotor skills to be achieved by the students during the practical teaching. So the students can't correlate the basic & clinical science. They lack confidence to apply this knowledge for clinical examination. Although there is scarcity in the literature on applicability & effectiveness of structured teaching programme for its use while teaching medical subjects in the field of medical education; many researchers have used structured teaching programme for educating either patients or for school children. They have found structured teaching method as an effective method to bring significant improvement in knowledge.[3,4,5]

For knowledge to be gained, it must be contextualized and the content matter should create meaning for the students. However, it is the role of the educators to aid learners in the development of a education framework that makes their learning effective, meaningful and stimulating[6].

Hence this project was undertaken with a view of improvement of student's skills at 'Living Anatomy' practical by teaching in stepwise, structured manner with introduction of communication skills to 1st MBBS students, followed by 'Structured Assessment'.

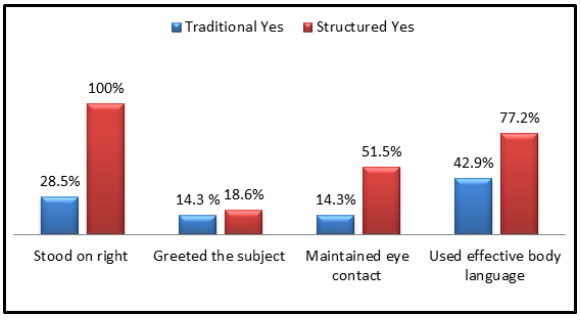
This article for the first time described the teaching of 'Living Anatomy' practical by structured teaching with introduction of communication skills to 1st MBBS students. The present study was done to introduce, implement & evaluate effectiveness of structured teaching for practical training of Living Anatomy.

Materials and Methods:

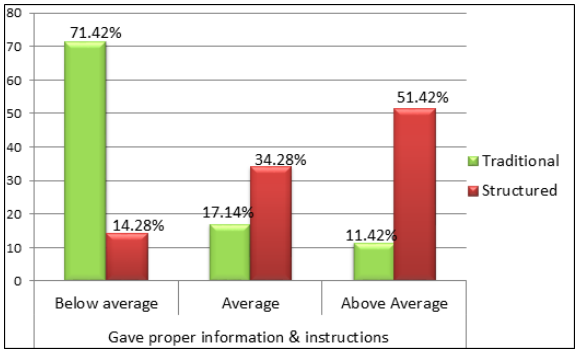
The project was approved by IEC (Institutional Ethical Committee).The study was conducted in the Department of Anatomy, B.V. (Deemed to be University). Medical College, Sangli. This was educational Interventional study. The study participants were 1st MBBS students(35, As per the convenience of the students), Faculty of Anatomy (08) & the subject(the person on whom task was performed). Students were exposed to traditional teaching by instructional method & their assessment was done by Structured Practical Examination with check list. Modules for structured teaching of Living Anatomy Practical with introduction of communication skills were prepared. Modules were validated by teaching staff of Anatomy department. As a part of communication skills, students were taught how to introduce

themselves to the subject (on whom task is performed) & how to give proper instructions for the assigned task & how to ensure the understanding of the subject after instructions. Sensitization of faculty was done about structured teaching followed by the PPT assisted lecture with actual demonstration of tasks by teachers. This was followed by structured assessment of students by structured practical examination & assessment with the help of check list & grades were given . Perception of faculty & students was done by feedback questionnaire using Likert's scale.[7] The questionnaires were validated by teaching staff of department of anatomy & PSM. The data was tabulated & analysis was done by Microsoft excel analysis.

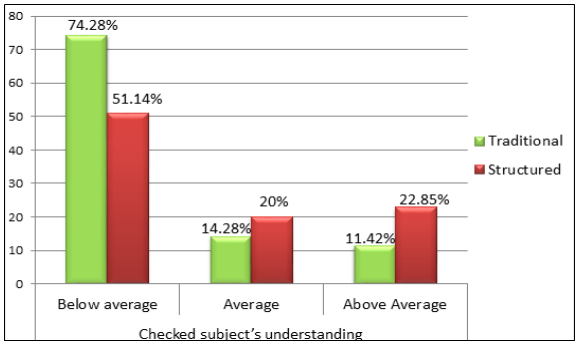
Observations:



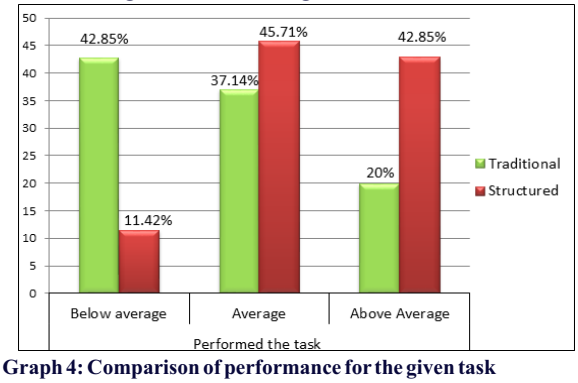
Graph 1: Comparison of performance by structured assessment



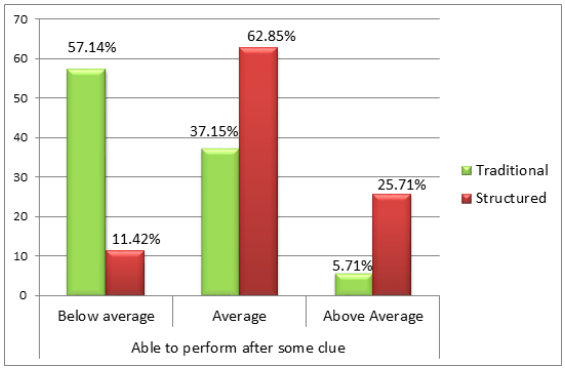
Graph 2: Comparison of performance by for giving information & instructions to subject



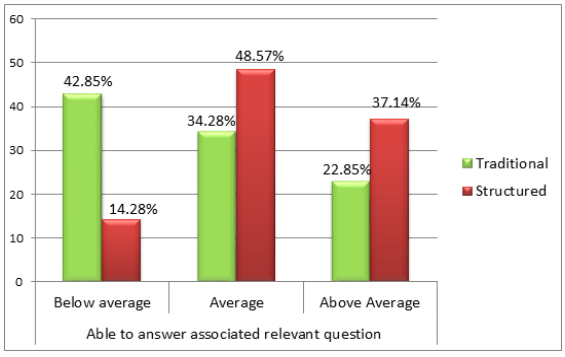
Graph 3: Comparison of performance for confirming understanding of instructions for given task



Graph 4: Comparison of performance for the given task



Graph 5: Comparison of performance after giving clue



Graph 6: Comparison of performance for answering associated relevant questions

It was observed that in majority of students, the performance of students & their way of communication with the subject improved from below average to average & above average level.

Table1: Perception of Students about the new method of Structured teaching & assessment

No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Better understanding & co-relation of the subject	28 (80%)	7 (20%)			
2	Explanations given during structured teaching were clear	26 (74.29%)	9 (25.71%)			
3	This method helped me to learn more effectively	30 (85.71%)	5 (14.28%)			
4	Strengthened link between theory and practical	21 (60%)	14 (40%)			
5	Helped to put topic into long-term memory	22 (62.85%)	10 (28.57%)	3 (8.57%)		
6	This new method is better than traditional method	21 (60%)	12 (34.28%)	2 (5.71%)		
7	Helped to understand communication skill	27 (77.14%)	5 (14.28%)	3 (8.57%)		
8	Skills are relevant to future practice & prepared me better for clinical subjects	28 (80%)	7 (20%)			

9	I feel this method will prepare me better for my exams	29 (82.85%)	6 (17.14%)			
10	Overall more satisfied with this type of learning	24 (68.57%)	11 31.42%)			

Majority of students either agreed or strongly agreed that the new structured teaching method helped to prepare them better not only for 1st MBBS examination but also for improving their patient examination skills.

Perception of students also included open ended question - Would you like to add any comment or suggestion about this new method of learning? Many students commented that they liked the new method & were more satisfied as there was better understanding of practical knowledge which resulted in better performance. Some of them also suggested to continue the method for future batches.

Table2: Perception of Faculty

No.	Question	Strongly Agree	Agree	Neutral	Disagree	Disagree Strongly
1	Enhanced students understanding & performance	2 (25%)	5 (62.5%)	1 (12.5%)		
2	Enhanced students' skills (psychomotor, attitude & communication) related to living Anatomy	5 (62.5%)	3 (37.5%)			
3	The topics selected for Structured teaching were appropriate	2 (25%)	6 (75%)			
4	Structured teaching & examination can improve long term retention of knowledge	2 (25%)	6 (75%)			
5	This method can be adopted for teaching the other areas of Living anatomy	4 (50%)	4 (50%)			

Almost all faculty either agreed or strongly agreed that the structured teaching for 'Living Anatomy Practical' appeared better method in enhancing students understanding, performance & psychomotor & communication skills.

Discussion:

Education of students in the first two years of medical school is changing at many institutions. Effective medical education should be viewed as a continuum, integration of the basic sciences and clinical medicine throughout the curriculum.[8]

In a study by Bergman, assessing students' actual knowledge of Clinical Anatomy revealed no relationship between students' knowledge and the school's didactic approach. Test failure rates based on absolute standards set by different groups of experts were indicative of unsatisfactory levels of anatomical knowledge. The standards also differed markedly between the groups of experts. Good test performance by students seemed to be related to total teaching time for Anatomy, teaching in clinical context, and revisiting anatomy topics in the course of the curriculum[9].

Anatomical knowledge can be assessed by written & practical examination. Practical examinations, however, test the ability of students to relate clinical and functional anatomical knowledge. This is particularly very true for Living Anatomy practical.

Anatomy propositional and functional knowledge can be assessed in many ways.[10]

One of the key points while setting examination is its alignment with learning outcomes & teaching objectives[8]. Keeping this in mind, in the present study a new method was tried to teach Living Anatomy by preparing modules for structured teaching & assessment by structured method.

There was improvement in performance of students in terms of better communication with the subject as well as improvement in psychomotor skills. Another important part of the present study during structured assessment was feedback to students. This helped to correct them while performing the same task next time. Feedback to students is one the recommendations while setting examinations.[11]

This method appeared to be rewarding to students as there was better performance at the time of demonstration of practical task (eg. Demonstrate how you test Biceps Brachii muscle) during examination, which also improved the score in examination.

Joseph Dusseau, Doug Knutson & David Way have commented that introduction of physical examination skills that correlate with Anatomy studies can lead to improvement in anatomy scores.[12] The present study also noted the same finding as that by Joseph et al.

The feedback of the study revealed that, students as well as faculty perceived this new Teaching –Learning & Assessment method a better method than the traditional method of teaching. Thus this new method may be used for future batches of students as it appeared effective & beneficial method where basic knowledge is integrated with clinical application.

Conclusion:

Structured teaching & assessment by check list pattern helped students to navigate smoothly through the steps of examination on the subject & also helped them know their weaknesses. Structured teaching enhanced students' understanding, co-relation of basic science with practical application & their performance in practical. Introduction of teaching of physical examination skills in structured manner along with communication skills lead to improvement in anatomy scores.

Limitations:

Less number of participants because many students were absent, More % of positive result & perception by students may be because of less sample size. the role of prior knowledge can be there for more positive results as structured teaching was reinforcement

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