

Role of Audiovisual Aid as a Teaching - Learning Method for Understanding Mechanism of Labour.

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Abstract :

Introduction: Students have various styles of learning and teachers have to choose different teaching methods to enhance their learning so as to make them acquire knowledge, skills and attitude. In Obstetrics, students have to master the skill of demonstrating the normal mechanism of labour using the dummy pelvis and fetal skull. Role of Video demonstration in addition to conventional teaching method was evaluated in this study.

Objectives:

To evaluate and compare the effectiveness of conventional small group teaching of mechanism of labour using the dummy pelvis and skull reinforcement with video demonstration.

Methodology:

A comparative study was done, involving 60 final year MBBS students, divided into two groups, Group A and Group B, each having 30 students. Both groups had demonstration class by the teacher on the mechanism of labour using the dummy pelvis and fetal skull. Group B students in addition had a video demonstration of mechanism of labour. Students were then evaluated by another teacher using the OSCE. Scores obtained by both the groups were analysed using SPSS software.

Results:

Group B were better performers as compared to Group A with a significant p value of 0.0026.

Conclusion:

Students exposed to the additional teaching learning media had clear understanding and long lasting effect on the must know psychomotor skill being taught. Adopting innovative approaches to teach students some basic skills in Obstetrics could bring revolutions in medical education.

Key words : Teaching aids, audio-visual aids in Obstetrics.

Introduction :

Medical students have different styles of learning which include visual, auditory, read/write and kinesthetic modes of learning¹. Teachers have to choose different teaching methods to enhance learning and make learning more interesting and impact bearing.

Obstetrics is a field of emergencies; we need to train our medical students to emerge as young doctors capable of handling these emergencies.

During the Obstetrics and Gynaecology clinical posting, every student is made to master the skill of demonstrating the normal mechanism of labour using the dummy pelvis and fetal skull.

To understand this mechanism the student needs to know the basic steps, then apply it to demonstrate the skill during the clinical assessment, for which the student will be using cognitive and psychomotor domains of learning. Cognitive domain needs assimilating the knowledge concerning labour mechanism and psychomotor domain is the acquisition of physical abilities, motor or muscular skills, manipulation of materials and objects or acts, requiring a neuromuscular co-ordination to demonstrate the mechanism of labour.^{2,3}

As, medical teachers we have to influence the learning process of the students to meet the educational objectives, which would also influence the educational decision making.

Since ages, mechanism of normal labour has been taught to students using the dummy pelvis and skull and now with the additional use of audio-visual aids, to teach procedural skills to a small group of students will make teaching/learning a great experience for the student and

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the teacher.

It helps the teacher to clarify, establish, correlate and co-ordinate accurate concepts, interpretations and enable learning to be made concrete, effective, interesting, inspirational, meaningful and vivid. Use of multiple teaching aids will enhance the learning process, highlighting the important points and brings about understanding where words fail.⁴

Audio visual aids provide a three dimensional view of the events that take place during labour mimicking real life situation, so that the student will be able to correlate with imagination and perform better. These aids complete the triangular process of learning i.e., motivation-clarification-stimulation needed for adult learning.⁴

We designed this study with a specific learning objective of teaching a small group of students, the mechanism of labour by using two different teaching methods and comparing the impact of each method with respect to learning effectiveness^{5,6}.

Objectives:

To evaluate and compare the effectiveness of conventional small group teaching of mechanism of labour using the dummy pelvis and skull and reinforcement with video demonstration.

Methodology:

The study was conducted on final year MBBS students. An expressed consent was taken from students who were willing to participate in the study.

Students were divided into two groups (Group A and Group B) of 30 each, division was in serial order depending on their roll numbers. Both the groups had a demonstration of mechanism of labour using the dummy pelvis and skull, by the concerned teacher. The set of information given during demonstration was same for both the groups. In addition Group B had a short video demonstration of the mechanism of labour after the demonstration class. After this, learning ability of students was assessed by another teacher, using OSCE with a check list (Table 1). Each student was asked to demonstrate the mechanism of labour using dummy pelvis & skull in three minutes and assessed for a total score of twelve.

For statistical analysis, Chi square test with SPSS software was used.

Students scoring 7 or more were classified as good performers and 6 or below scores were considered as below average performers.

Results

Group B students performed better than group A in all the steps involving psychomotor domain, whereas at the cognitive level- defining labour, there was no statistical difference.

Table - 1 : Comparison of students performance at various Steps of OSCE.

Check List	Group A Performance (%)	Group B Performance (%)
Definition	24 (80%)	26 (86%)
Sequence	14 (46%)	22 (73%)
Engagement	22 (73%)	23 (76%)
Descent	13 (42%)	29 (97%)
Internal Rotation	16 (45%)	27 (90%)
Flexion	13 (43%)	28 (93%)
Crowning	16 (49%)	25 (83%)
Extension	13 (43%)	26 (86%)
Restitution	18 (60%)	24 (80%)
External Rotation	19 (63%)	24 (80%)
Shoulder Delivery	18 (60%)	26 (87%)
Delvery Of The Body	17 (56%)	28 (93%)

Table - 2 : Comparative Analysis

Performance	Group A	Group B
Good Performers (>60%)	16 (53.4%)	26 (86.6%)
Below Average Performers (<60%)	14 (46.6%)	4 (13.4%)
Total	30 (100%)	30 (100%)

Using the chi square test, p value was 0.0026 which is statistically significant.

After analyzing both the groups, 53.4% in Group A and 86.6% in Group B were good performers. Below average performers were 46.6% in Group A & 13.4% in Group B. Chi square value: 9.07, df:1, p-value:0.0026

Discussion

Assessment drives learning. As per the Miller's pyramid a student can perform a skill only if he knows it, knows how, then shows how to perform it for future application in his medical profession.

As per strict guidelines by the Medical Council of India, alternative teaching methodology has been incorporated in the Indian medical teaching system. Here in this study, Video was taken as an alternative approach to

demonstrate how practical skills of students can be improved.

The present study shows that the efficacy of teaching and delivering information was easier and effective in terms of recollecting facts by students. These can be attributed to the fact that Wernicke's area of brain can integrate the information received via auditory and visual pathway.^{7,8} This information is better understood and registered for a longer time. As per feedback, students enjoyed the audio visual demonstration and it helped them to imagine things in a better way. This study involved a small group of students, further studies involving large number of students are invited.

To the best of our knowledge, literature search using the search engine medline database with the key words audio-visual aids obstetrics, teaching aids obstetrics as on 7.11.13, did not reveal any similar studies for comparison. Aggarwal *et al*, in their study on evaluating the effectiveness of the use of audio visual aids in hematology laboratory, involving 50 BPT students found that efficacy of teaching and delivery information was easier and effective in terms of recollecting facts by students. Students in the control group performed better with enjoyable new way of learning⁹.

Conclusion

This study clearly shows that students exposed to audio-visual method performed better and enjoyed this new

way of learning. Audio-visual aids provide significant gains in informational learning, retention and recall, thinking and reasoning, activity, interest, imagination, better assimilation and personal growth and development. The aids are the stimuli for learning 'why', 'how', 'when' and 'where'. The hard to understand principles are usually made clear by the intelligent use of skillfully designed instructional media.

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Hypothesis Test

Hypothesis test is a statistical test that is used to determine if there is enough evidence in a sample (s) of data to infer that a certain condition is true for the entire population. A hypothesis test consists of two opposing hypotheses (a null hypothesis denoted by H_0 , and an alternative hypothesis denoted by H_a), a test statistic that follows an assumed distribution, and a rejection region. The alternative hypothesis is the hypothesis the researcher wishes to explore. The null hypothesis is a contradiction of the alternative hypothesis, it is the hypothesis to be tested.