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## New Methods of Recording Attendance in Pharmacology: Comparative Study.

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### ABSTRACT

To assess the advantages and disadvantages of the conventional method and group attendance method (new method) recording attendance and its comparison. The research conducted over the duration of 6 month in second year medical students. The attendance was recorded by conventional method and group attendance method in theory class as well as in practical class. In practical class batch was divided into batch-A 75 students, batch-B 75 students. Students will be given the pretest before class and posttest after the class to solve and feedback forms to fill. Data was tabulated and analyzed using unpaired 't' test. Similarly the feedback forms were also analyzed for the responses. When the two methods – conventional method, group method are compared qualitatively and quantitatively it was proved that group method is the best method of taking the attendance due to its advantages.

**Keywords:** conventional method, group method, attendance, medical students

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## INTRODUCTION

In many institution & academic organization , attendance is a very important criteria which is used for various purposes include record keeping, assessment of student and promotion of optimal and consistant attendance in class [1].

Susan M. defined that attendance is act or fact of attending work or is used to define number of person on particular day at work / place [2].

Now a days the seats in the Indian medical colleges are increasing from conventional 50 - 60 to more than 100 in some colleges up to 200 per year Today a medical teacher has to deal with large group of students as compared to the past era.

In the present medical education system in India didactic lecture is still the commonest and important method of education where teacher has to address a group of 70 to 100 students, which is as a large group teaching. The most commonly followed method of taking the attendance in the class till date is the conventional method of taking the attendance by calling the roll numbers/names at the end of the class. When it comes to taking the attendance in a large class of 70 students or more the conventional method has some disadvantages like consumption of too much time, burden of calling 100 or more numbers when teacher has already exhausted taking the lecture of nearly 1 hr students may not hear the call of the teacher which results in coming of the students to the teacher again after the class to clarify regarding the attendance as they feel they have not responded properly for the roll call, proxy attendance is very difficult to catch in a class of 70 students or more [3-5].

There are other advanced methods of taking attendance like the biometric method of taking attendance which can release the burden of taking attendance from the teachers but none of the methods are till date utilized as a part of teaching learning process [6,7].

Thus we decided to develop new methods of taking attendance namely the group method of attendance (GMA) for taking the attendance in the class of 70 students or more which can very well be utilized as teaching learning methodology also.

The study was also designed to compare the old Vs new method to evaluate the better method out of the two. Thus the study is an effort to find out new method which will be less time taking, effective and will make the medical education system more students friendly.

## METHODS AND MATERIALS

The research conducted over the duration of 6 month in second year medical students. Ethical approval was obtained from Institutional Ethics Committee. This study was started in Jan 2012 in the centre of Jawaharlal Nehru Medical College, Sawangi ( Meghe ) after taking the consent of all 174 students in the batch (including referred batch). Study sample size was 150 students (Compensating for the absent students).

The attendance was taken by conventional method and group attendance method in theory class as well as in practical class. In practical class batch was divided into batch-A 75 students, batch-B 75 students.

### Method of taking the attendance by conventional method

Attendance is taken at the end of the class. Teacher calls out the roll number of the students for the responses. Teacher marks the attendance in the optical sheet provided. Teacher marks the right sign in the box of P ( present) or A ( absent) in front of the roll number. Teacher gives the feedback from and the posttest to the students to solve. Teacher collects the feedback and the posttest forms.

### Steps in taking the attendance by Group attendance method

In this method the attendance is taken in groups rather than the conventional attendance method where the attendance is taken with the whole batch considering as unit

**Following steps are followed in Group attendance method**

The batch is divided into the groups of 15 students. For example in the batch of 75 students there will be 5 groups of 15 students each. The student stood up and told their roll no. The students will then be marked present or absent accordingly on the optical sheet. The same procedure will be carried out with the other groups of students from other groups. Students will be given the post test to solve and feedback forms to fill.

**For comparing between the Conventional method and the Group attendance method**

Batch A: Topic: hormonal contraceptive: Pretest: Teaching: Conventional method of attendance : feedback & post test. To Batch A after taking the pretest the topic of hormonal contraceptives was taught and the attendance was taken by conventional method followed by the post test and feedback. Batch B: Topic: hormonal contraceptive: Pre test: Teaching : Group method of attendance: feedback & post test. To Batch B after taking the pretest the same topic of hormonal contraceptive was taken by the same teacher and attendance was taken by **Group** attendance method followed by posttest and feedback. Analysis of the pretest and post test scores was done. The effective gain in learning is calculated using the formula.

$$\text{Effective gain in learning} = \frac{\text{Score of post test} - \text{score of pretest}}{\text{Score of posttest}} \times 100.$$

Data was tabulated and analyzed using unpaired 't' test. Similarly the feedback forms were also analyzed for the responses.

**Table 1: Feedback form for the conventional method of attendance**

S.N.	Questions asked	Response	% of students responding
1.	When is the attendance taken in the class (n= 150)	Before the class After the class	0.00 100.00
2.	Whether attendance is taken using the name or roll no? (n= 150)	By Name By Roll no.	0.00 100.00
3.	Do you preferred to be called by name or roll no? (n= 150)	Name Roll no.	60.4 39.6
4.	Do you think that it will be possible for the teacher to take the attendance by name in class of 100 students or more? (n= 150)	Yes No	30.4 59.6
5.	How many minutes do you think are required to take the attendance for the class of 100 students? (n= 150)	2-5 min 6-10min 11-15 min 16-20 min	20.1 48.6 40.8 0.5
6.	Have you ever gone to the class teacher after the class to correct your attendance as you did not here the teacher's call or thought that teacher had missed your response? (n= 150)	Yes No	95.6 4.4
7.	Do you think it is easy to give the proxy in the class of 100 students? (n= 150)	Yes No	83.8 16.2
8.	Do you think that the present system of attendance takes into consideration only the physical presence of student in the class (n= 150)	Yes No	88.7 11.3
9.	Do you think the present system of taking attendance by any means makes you attentive during the class? (n= 150)	Yes No	11.7 88.3
10.	Do you think the present system of taking attendance by any means will be helpful in improving your performance in the examinations? (n=150)	Yes No	1.4 98.6

**Table 2: Feedback of Group attendance method**

S.N	Questions	Response	% of students responding
1.	How many minutes do you think are required to take the attendance for the class of 100 students with group attendance method? (n= 150)	6-10 min 2- 5 min 11-15min 16-20min	9.6 10.6 78.9 0.5
2.	Is it required to go to the class teacher after the class to correct your attendance as you did not hear the teacher’s call or thought that teacher had missed your response? (n= 150)	No Yes	100 0.00
3.	Do you think it is easy to give the proxy in the class of 100 students when the attendance is taken with the group attendance method? (n= 150)	No Yes	99.6 0.4
4.	Do you think that the present system of attendance takes into consideration only the physical presence of student in the class? (n= 150)	No Yes	87.2 12.8
5.	Do you think the present system of taking attendance by any means makes you attentive during the class? (n= 150)	No Yes	14.3 85.7
6.	Do you think the present system of taking attendance by any means will be helpful in improving your performance in the examinations? (n= 150)	No yes	11.1 88.9

**Table 3**

**For comparing between the conventional method and the group attendance method (n=75 per batch)**

Batch A: Topic: hormonal contraceptive: Pre test: Teaching: Conventional method of attendance : feedback & post test

Batch B: Topic: hormonal contraceptive: Pre test: Teaching : Group method of attendance: feedback & post test

S.N	Test	Batch-A (CMA)	Batch-B (GMA)	p-value
1.	Pre-test	6.78± 1.77	5.97 ± 2.02	P>0.05
2.	Post-test	10.96± 3.06	14.4 ± 2.89*	*P<0.05
3.	Average Effective Learning Gain (in percentage)	41.13± 4.06	58.41 ± 3.80*	*P<0.05

**Table 4**

**Step III : Cross over**

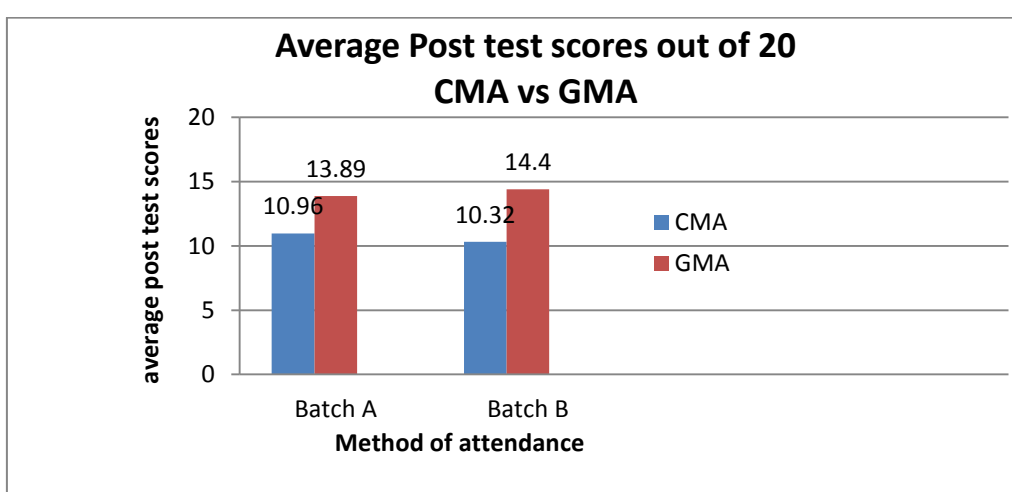
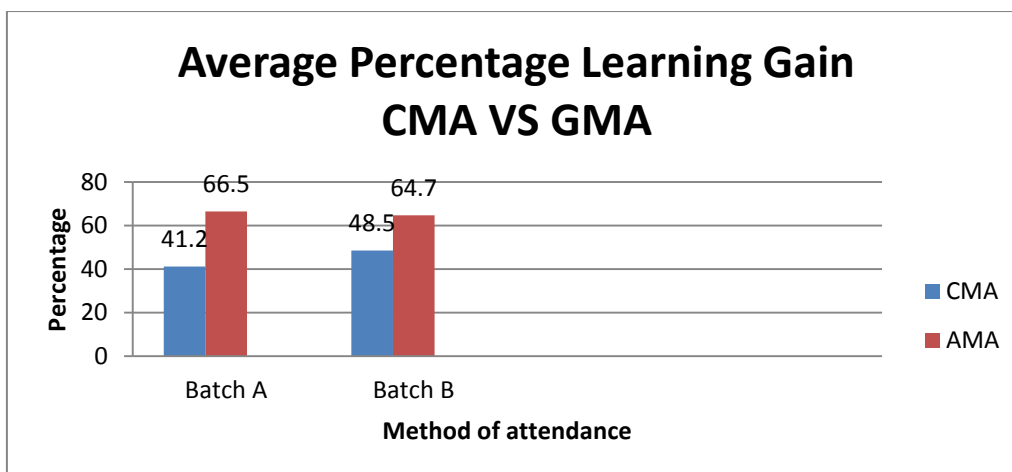
**For comparing between the conventional method and the group attendance method (n=75 per batch)**

Batch A : Topic : Insulin : Pre test: Teaching : Group method of attendance : feed back & post test

Batch B : Topic : Insulin : Pre test: Teaching : conventional method of attendance : feed back & post test

S.N	Teste	Batch-A (CMA)	Batch-B (GMA)	p-value
1.	Pre-test	5.79 ± 1.22	5.71± 1.06	P>0.05
2.	Post-test	10.32±2.37	13.89±1.98*	*P<0.05
3.	Average Effective Learning Gain (in percentage)	58.65± 3.03	44.6 ± 6.89*	*P<0.05

CMA : Conventional Method of Attendance GMA: Group Method of Attendance  
P>0.05- p- value not significant.



#### DISCUSSION

##### Feedback for the present system (conventional method) of taking attendance

The overall feedback from the students shows that most of the times the attendance is taken after the class with the call of the roll numbers. Most of the students (59.6%) think that it is difficult to call the names of all the students to take the attendance but still most of the students (60.4 %) want that if at all the attendance is to be taken for the conventional method it should be by calling the names of the students rather than the roll numbers.

Almost 48.6% students felt that it takes 6-10 min to take the attendance by conventional method in the class of 100 students or more, while 40.8 % students were of the opinion that it takes 11-50 min. for this process. Most of the students (95.6%) stated that they have gone one or the other times to the teacher after the end of the class to correct or clarify regarding the attendance as they did not hear the teacher's call or thought that teacher has missed the response. Most of the students(83.8%) thought that it is very easy to give the proxy attendance when it is taken by conventional method.88.7 % students were of the opinion that the conventional system of education takes into account only the physical presence of the teacher in the class and 88.3% students were of the opinion that the conventional system of education do not make them attentive in the class or there is no relation between the attendance and the attentiveness of the students in the class. Regarding the utility of the conventional method of taking education in improving upon the performance in the examination 98.6% students felt that it is not in any way helpful in improving the performance in the examinations.

**Thus from the feedback we come across the following disadvantages of the conventional system of taking attendance**

- Though most of the students want that their names should be called it is not possible to do so in the class of 100 or more students.
- The students need to go to the teacher after the class as they fail to respond or feel that the teacher has not heard their response
- It is very easy to give the proxy attendance in the class of 100 students or more when the attendance is taken by conventional method.
- It takes into consideration only physical presence of students in the class
- It does not play any part in making the students attentive in the class
- It is in no way helpful in improving the performance in the examination.

**The only advantage it seems is**

It takes 6-10 mins to take the attendance due to the simplicity of the process.'

Thus it can very well be concluded that there is requirement of developing new method of taking attendance which will not only be an efficient method but will also take into consideration the mental presence of students in the class and will be a part of teaching and learning process.

**Feedback of the Group Method of Attendance (GMA)**

After experiencing the Group Method of Attendance (GMA) 78.9% students felt that it takes 11-15 mins to take the attendance by this method while 10.6% felt that it required 6-10 mins.

Regarding going to the teacher after the class to clarify the attendance 100% students feel that with this method there is no need to go to the teacher after the class to clarify the attendance.

99.6 % felt that it is not easy to give the proxy attendance when the attendance is taken with the group attendance method.

Regarding the physical presence of the students in the class only 12.8 % felt that the group attendance method takes into consideration only the physical presence of students in the class while 87.2% students felt that the attendance has to do something regarding the mental presence of students in the class.

Majority ( 88.9%) felt that taking the attendance with the group attendance method will improve upon their performance in the examination. The reason can be obtained with their answer to the question whether the method makes them more attentive in the class where 85.7% responded saying that the group attendance method made them more attentive in the class

**Thus the advantages of the group attendance method can be stated as follows**

- The students need not to go to the teacher after the class as they fail to respond or feel that the teacher has not heard their response
- It is very difficult to give the proxy attendance in the class of 100 students or more when the attendance is taken by conventional method.
- It takes into consideration physical presence along with the mental presence.
- It makes the students attentive in the class
- It can be helpful in improving the performance in the examination.

**The disadvantages of this methods are**

- It takes 11-15 mins to take the attendance reducing the period of interaction during the lecture.
- There is no method in the system by which the mental presence of the student in the class can be quantified .



- The predetermined sitting arrangement is required in the class room which may not be available in every class room.

### **Comparison between the conventional method and group attendance method using the pre test, post test scores and effective learning gain**

**Pretest scores:** Pre test scores ( out of 20) in all the steps are between 5 to 7 and they do not differ significantly when compared, stating the fact that the students are not already well versed with the chapters taught in the lecture and the knowledge level of two groups is more or less equal when we began with the intervention with new methods of attendance

#### **Post-test scores**

### **Comparison between the conventional method and group method of attendance using the post test scores**

When the comparison of the post test scores (out of 20 marks) was made it was found that in the batch A where conventional method was used the average score of the class was  $10.6 \pm 3.06$  while when for batch B where group attendance method was used the average score was  $14.4 \pm 2.89$  with statistically significant difference between the two groups.

When the groups were crossed over for the methods the post test scores remained significantly higher ( $13.89 \pm 1.98$ ) in batch A this time where group attendance method was used to take the attendance as compared to batch B ( $10.32 \pm 2.37$ ) where the conventional method is now used.

These observations prove the fact that in comparison with the conventional method group attendance method is a better method of taking the attendance as far as the post test is concerned or in other words it can be used as the part of teaching learning process to improve upon the learning in the students.

### **Comparison between the conventional method and group method of attendance using percentage effective learning gain**

- When the comparison of the **Percentage Effective Learning Gain** was made it was found that in the batch A where conventional method was used the average score of the class was  $41.13 \pm 4.04$  while when for batch B where group attendance method was used the average score was  $58.41 \pm 3.80$  with statistically significant difference between the two groups.
- When the groups were crossed over for the methods the post test scores remained significantly higher ( $58.65 \pm 3.03$ ) in batch A this time where group attendance method was used to take the attendance as compared to batch B ( $44.6 \pm 6.89$ ) where the conventional method is now used.
- These observations prove the fact that in comparison with the conventional method group attendance method is a better method of taking the attendance as far as the **Percentage Effective Learning Gain** is concerned or in other words it can be used as the part of teaching learning process to improve upon the learning in the students.

### **CONCLUSION**

When the two methods – conventional method, group method are compared qualitatively and quantitatively it was proved that group method is the best method of taking the attendance due to its advantages.

#### **Limitations and Scope**

- Involvement of only the second yr medical students.
- The study can be extended to medical students of first and final year and also to the students of other health professional educational courses like dental, nursing , ayurvedic and physiotherapy



**Scope**

The new method of attendance can replace the conventional method of attendance in the times to come. It can become an important method for teaching and enhancing the learning process.

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