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Evaluate the effectiveness of incomplete handouts over complete handouts in pathology lectures and students perception

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Abstract

Background: Handouts make the lectures “portable and enduring”. Students’ performance, can vary depending on the type of handouts. Complete handouts are one which contains 100% content of the lecture and incomplete hand-outs are one which contains 75% of the lecture content. Note-taking by students is generally seen as an integral part of the process of learning from lectures. But it interferes with ability to listen. Writing in the blank spaces in hand-out during a lecture may not interfere with listening ability and allow students to be alert and active, and learn by writing.

Objectives: To assess and to know the perception of 2nd year MBBS student on the usefulness of incomplete handouts over complete handouts in pathology lectures.

Methodology: It is an intervention study done in 41 students of 2nd MBBS in pathology lectures, where the complete handout given to the students on the day of lecture and after the class a recall test was conducted. After 1week a retention test was conducted. Similar intervention was done for the incomplete handout. Pre validated MCQs was used. The feedback was taken at the end of the study.

Results: study showed the results in MCQ scores for incomplete handout (mean=5.73+1.24) is better than complete handout MCQ scores (mean=3.61+1.51) and the majority of students felt that incomplete handouts increased their motivation in learning and helped in understanding pathology.

Conclusion: Majority of student perception towards the use of incomplete handouts was more than the complete handouts. The effectiveness of incomplete handouts is also shown better than complete handout.

Keywords: Complete handout, incomplete handouts, pathology, teaching learning methods

Introduction

Lecture is the most cost effective method which can transmit a large amount of information to a large group. But knowledge learnt in isolation is easily forgotten, it requires active involvement of learner. Hand-outs make the lectures “portable and enduring”^[1]. Hand-outs could be a useful to guide the students to study in an organized way and is easy for them to cope with their exam stress^[2]. Although lecture hand-outs are commonly given to students during theory lectures, students’ perception, as well as their performance, can vary depending on the type of hand-outs they receive for information processing^[3].

Complete hand-outs are one which contains 100% content of the lecture and incomplete hand-outs are one which contains 75% of the lecture content. Incomplete hand-outs include incomplete picture/figure/tables and sentences which should be filled by students during lecture.

Note-taking by students is generally seen as an integral and essential part of the process of learning from lectures^[4]. Note taking ensures active involvement of student. But it interferes with ability to listen, students may miss critical information while taking notes. Writing in the blank spaces in hand-out during a lecture may not interfere with listening ability provided short breaks is given during lecture to fill in blanks instead of making a whole note of lecture. This allows the students to be alert and active, and to learn by writing.

Hence this study was planned to find the effectiveness of incomplete hand-outs over complete hand-outs in pathology lectures by assessing the student performance in recall and retention test following lectures with both types of and assessing perception of students regarding complete and incomplete handouts using questionnaire.

Objectives

1. To assess 2nd year MBBS student performance in recall and retention test following lectures with different types of handout.
2. To assess perception of 2nd year MBBS student regarding complete and incomplete hand-outs using questionnaire.

Material and methods

Study place: JJMMC, Davangere.

Duration: 15 days

Study design: Cross sectional study

Sample size: 41 students of 2nd year MBBS. The topics of nearly equal difficulty level were identified. During the first intervention, complete handout was given to the students on the day of lecture and after the class a recall test was

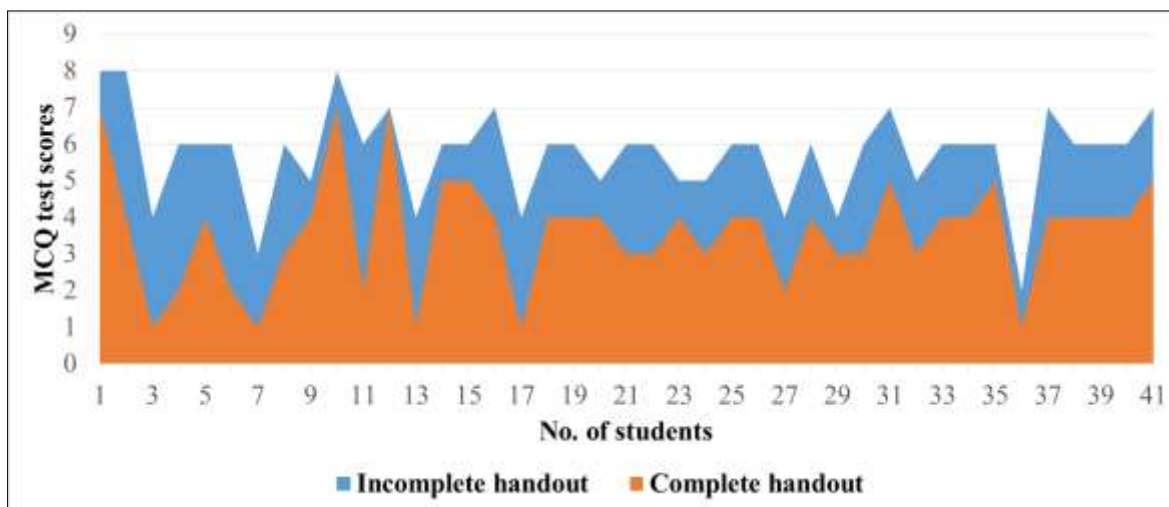
conducted. A proper seating arrangement was made before MCQ test. After 1 week a retention test on same topic was conducted. Similar intervention was done for the incomplete handout. Pre validated MCQs prepared by expert faculty of pathology was used. The feedback on perception of students on usage of different types of handouts was taken at the end of the study. Statistical analysis was done in Microsoft excel sheet was used to apply paired student ‘t’ test.

Results

The Graph1 shows the MCQ score of recall test which marks the better scores with incomplete handout than complete handout. Graph2 which shows the scores of retention test also shows similar results. The table 1 shows the comparison of student t test scores which shows the scores obtained are statistically not significant. The table 2 shows the student perception on the different type of lecture handouts.

Table 1: Comparison of student test scores

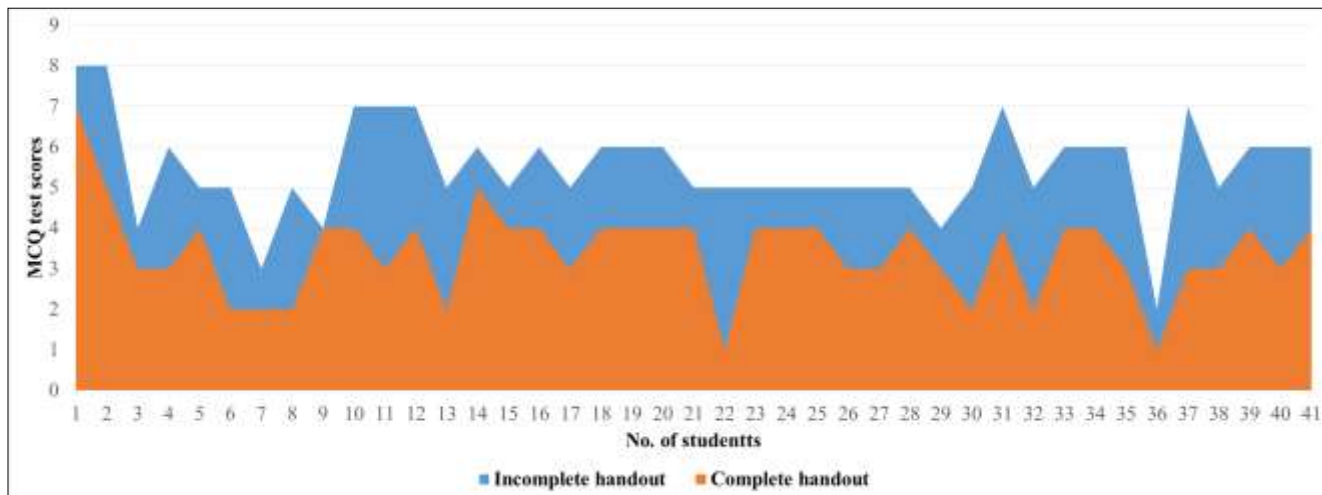
	Incomplete handout Mean (sd)	Complete handout Mean (sd)	Paired student t test (One Tail)
Recall test	5.73 (1.25)	3.61 (1.51)	1.39
Retention test	5.49 (1.17)	3.41 (1.10)	2.08



Graph 1: Comparison of MCQ test scores of recall test

Table 2: Perception of students regarding complete and incomplete handout

Item No	Items	Complete handout	Incomplete handout	Both
1.	Motivation to learning was increased with	13 (31.5%)	20 (49%)	8 (19.5%)
2.	Which hand out increased ability to understand concepts better in class room.	18 (44%)	17 (41.5%)	6 (14.5%)
3.	Which encouraged to remain motivated throughout the lecture.	13 (31.5%)	20 (49%)	8 (19.5%)
4.	Which Instilled confidence in your academic ability	13 (31.5%)	22 (54%)	6 (14.5%)
5.	In understanding pathology topics which type of lecture handouts were useful?	17 (41.5%)	17 (41.5%)	7 (17%)
6.	Which hand out helped you to retain the lesson and answer the MCQ test	14 (34%)	20 (49%)	7 (17%)



Graph 2: Comparison of MCQ test scores of retention test

Discussion

Note-taking enhances information encoding but college students take poor notes, miss 50% of critical information. Incomplete lecture outlines guide note-taking and facilitate learning during lectures. Complete lecture notes ensure students have accurate notes to study for exams.

In this study the results in the MCQ scores for incomplete handout (mean=5.73+1.24) is better than complete handout MCQ scores (mean=3.61+1.51) which is in par with the study by Prabhu *et al.* which showed students performance was better with the incomplete handouts (mean= 4.85 +0.36) than complete handouts (mean=2.61+0.77) [3].

In this study majority of the students felt that incomplete handouts increased their motivation in learning (49%) and kept them motivated throughout the lecture (49%). And they also felt it instilled confidence in their academic ability. The incomplete handouts also helped to retain the lecture content (49%) better than complete handouts. It was found that there was not much difference between the complete or incomplete handouts when it is pertaining to understanding the topic.

In a study by Saidunnisa *et al.* which mainly studied perceptions of first year medical students about the effectiveness of using complete and incomplete handouts provided to learn Biochemistry it was shown that overall, experience of the students was positive towards the use of lecture handouts, specifically for complete handouts as means of preparation, comprehension, revision and performance. In contrary to our study where students preferred the incomplete handouts over complete handouts [5].

In a study by Prabhu *et al.* which was undertaken to find out the efficacy of the incomplete handouts against full lecture handout during ophthalmology theory lectures showed majority of the though students preferred to have full handouts of the ophthalmology lectures, but they could perform better after going through incomplete handouts [3].

Though not statistically significant the study results derives that the student could outperform in the tests of lecture from incomplete handouts than the complete handout. And also according to students perception the students preferred incomplete handouts over complete handouts in pathology lecture.

Pathology is the vast subject, this study helps us to arrive at a conclusion that incomplete handouts can be given to the students to help them motivated during the lectures and later

they can be provided with complete handouts in order to help them in the final exams. So they are not lost in the depth of knowledge that they need to acquire. At the same time caution to be taken by the lectures in preparing the effective handouts.

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