



ORIGINAL RESEARCH PAPER

Health Science

EFFECTIVENESS OF MODULAR TEACHING IN RACHANA SHARIR – A PILOT STUDY

KEY WORDS: Modular teaching , Ayurveda, Rachana sharir

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ABSTRACT

The key purpose of this study was to evaluate the effectiveness of modular approach in teaching to assess the students learning, and to determine whether the modular teaching is more effective than traditional methods for further implementation. . This was an interventional study with a post test only design. The study Population were 52 first year undergraduate students of Ayurveda The innovative modular teaching was pilot tested in the subject of Rachana sharir (anatomy). The data was collected from both groups (controlled and experimental) analyzed and interpreted by using mean, standard deviation and t-test through the use of SIGMA STAT 31. The result scores were in the favor of usage of modular teaching approach. Hence it is recommended that the modular approach should be widely used at various levels of education.

INTRODUCTION:

Ayurveda, better known as an Indian system of Medicine has carved a niche on the global platform with its eternal principles and this has to go a long way. In the wake of these developments in the global medical scenario, education in Ayurveda needs to be redesigned on the basis of the reforms occurring in medical education in other fraternities of medical science, which will define attributes of an Ayurvedic Physician competent to serve the societal needs locally as well as globally.[1]

The CCIM has also been instrumental in unifying and standardizing Ayurvedic education in modern India. In spite of these desirable developments, Ayurvedic education seems to have failed in its primary objective of nurturing the core skill sets that can transform the young aspirants into self-confident Ayurveda physicians. What seems to be conspicuously lacking is a well-developed education technology that clearly defines the learning outcomes and spells out the core skill sets that should be made the focus of the teaching programs.[2]

Dr Kishor Patwardhan in one of his editorial states that the extent of practical exposure to various clinical skills is the most important lacuna in the current system of graduate-level education in Ayurveda sector. Teaching is generally perceived as memory-oriented instead of being analysis-, skill- and understanding- oriented.[3] Today, Didactic teaching forms a core component of teaching which fails to generate the three domains resulting into a passive learning.

Modular teaching may bridge this gap and will help to develop a uniform, standardized teaching pattern. This innovation in the modular approach contains a series of activities each of which start with teaching instructions addressed to the learners, explanation, exercises and generalizations.

With the above consideration, we thought of piloting this innovative approach of modular teaching in the subject of Rachana sharir with an objective to assess its effectiveness as compared to conventional teaching.

CONCEPT OF MODULAR TEACHING:

Modular teaching or modular instruction can be delivered to the learners through a well structured module. A module is defined as a self-contained, independent unit of a planned series of learning activities designed to help the student accomplish certain well-defined objectives.[4]

Taneja(1989) defined module as a unit of work in a course of instruction that is virtually self-contained and a method of teaching that is based on the concept of building up skills and knowledge in discrete. [5]

A module is a set of learning opportunities organized around a well - defined topic which contains the elements of ordinate dictation, categorical objectives, edifying cognition activities, and evaluation utilizing criterion - referenced measures [6]

The Module should be independent, self contained., self instructional, with clear well defined objectives, structured sequence of knowledge, systematically organized learning opportunities., Utilization of a variety of media..It should ensure active participation by learner. with immediate reinforcement of responses. And most important evaluation strategy . [7, 8]

As stated by Dr O.P Murthy in his editorial [9]

Modular teaching would be beneficial in cooperative learning, in long –term retention of subject, self motivation, and advance level of reasoning, hands-on-experience, academic as well as social development of the teacher –student team. It involves the greatest pleasure of human being that is art of doing and learning a subject in enthusiastic and participatory manner. Its helpful in reducing conflicts, confusions, ambiguity in the areas of dispute and finds a solution to conflicting information.

Dr Karthikeyan [10] in his study on Modular teaching in Dermatology opines that In modular approach , active student participation leads to increased enthusiasm and promotes analytical thinking, attributes that are suppressed in more traditional modes of teaching. Due to involvement of basic sciences as well, the students have an opportunity to correlate the various aspects of a disease thus leading to an easy understanding of the subject. Since modular teaching aims at a learning experience with practical orientation, it is more reality oriented. In modular teaching, the instructor is more of a facilitator and resource person rather than a mere conduit for passive transfer of knowledge.

METHODOLOGY:

An instructional module on Hepatobiliary system was developed for the intervention on modular teaching. The module comprised of objectives pertaining to all three domains of learning, instructional strategies, teaching media, relevant learning resources and assessment techniques, which was validated by the experts in medical education.

the module focused on active learning and was student centric so that they gain maximum understanding and knowledge of the subject. This was a practical-based –learning exercise, promoting higher level of thinking and paving way to inculcate the behavioural, attitudinal and communication skill.

Before the intervention the faculty members of the department were sensitized and oriented towards the execution of the modular approach, use of e learning resources and instructional strategy like role play, group discussion.

The module on hepatobiliary system was designed with well defined objectives exclusively for cognitive, psychomotor and affective domain of learning.. The instructional methods included didactic lecture, demonstration, group discussion, dissection, role plays, video clips with the use of relevant audio visual aids for powerpoint presentation. The module included the mention of standard text book and reference books and internet resources. The assessment method were written test to test knowledge component and OSPE and direct observation for skills and attitude.

Locus of the study: The study was conducted in the department of Rachana sharir,(Anatomy) of Mahatma Gandhi Ayurved college, Hospital & Research centre, Salod(H), Wardha

Research Design

Post test only – control group design

Study Population

The Study Population were first year undergraduate students of Ayurveda . Out of 60 students, 52 participated in the study who were randomly divided into two groups by lottery method.

Both the control group and the study group comprised of 26 students each.The control group was taught through the use of traditional lecture and practical method. Whereas the interventional group was taught through modular teaching approach. Both the groups were taught by the same faculty member to overcome the bias. At the end of the teaching, post test was administered to both the groups which comprised of Multiple choice questions, brief answer questions and short answer questions to assess the knowledge gain. Also objective structured practical examination was conducted to assess the skills of the learners. After the valuation of the post test, data of the result was tabulated and analysis was done by using SIGMA STAT 3.1

RESULTS:

Table1: Comparison between study group & control group for written post test

t-test

Data source: Data 1 in Notebook 1

Normality Test:Passed (P = 0.295)

Equal Variance Test:Passed (P = 0.762)

Group Name	N	Missing	Mean	Std Dev	SEM
Study group	26	0	13.038	1.428	0.28
Control group	26	0	11.423	1.362	0.267

Difference 1.615

t = 4.175 with 50 degrees of freedom. (P = <0.001)

95 percent confidence interval for difference of means: 0.838 to 2.393

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

Power of performed test with alpha = 0.050: 0.987

Table 2: Comparison between study group & control group for OSPE post

test

t-test

Data source: Data 1 in Notebook 1

Normality Test:Passed (P = 0.067)

Equal Variance Test:Passed (P = 0.879)

Group Name	N	Missing	Mean	Std Dev	SEM
Study group	26	0	14.462	1.363	0.267
Control group	26	0	13.269	1.313	0.258

Difference 1.192

t = 3.212 with 50 degrees of freedom. (P = 0.002)

95 percent confidence interval for difference of means: 0.447 to 1.938

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = 0.002).

Power of performed test with alpha = 0.050: 0.866

DISCUSSION:

This pilot study was undertaken to assess the effectiveness of modular teaching as compared to the traditional mode of teaching. Modular instruction is an instructional system based on the use of planned units of instruction or modules.A module has been defined by Goldschmid & Goldschmid (1972) as "a self-contained independent unit of a planned series of learning activities designed to help the student accomplish certain well-defined objectives.

Results of the analysis to compare the effectiveness of teaching by a modular approach as compared to teaching by traditional lecture-practical method indicated that the study group performed more effectively than the control group in written test [table 1] which tested their knowledge and OSPE which assessed their skills and attitude.[table 2] These results support the concept of Pareek and Rao (1981)[11], that modular approach creates interest in the individuals and they demonstrated significantly higher achievements than the individuals taught by traditional approach.

The experimental group performed significantly better than the control group on posttest. The difference between the posttest mean scores of the two groups was significant at 0.05 level.

RECOMMENDATION:

Considering the findings of the study, it is recommended that Modular teaching should be used in the process of teaching of other subjects of Ayurveda

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