



*Research Article*

**Evaluation of one day hands on training workshop for data entry, data analysis and its interpretation in 2<sup>nd</sup> year post graduate students of Ayurveda**

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**ABSTRACT:**

**Introduction:** As per MUHS guidelines postgraduate students have the separate topic Medical Statistics for MD 1<sup>st</sup> year and at the end of 2<sup>nd</sup> year they have to complete statistical analysis of their research project. By attending this workshop students will able to do statistical analysis of their own research project. So this type of study has been selected

**Objective:** PG student of Ayurveda will be able to do data entry in excel properly and analyze at least own research data by using statistical software SPSS AND Primer of Biostatistics after doing the workshop.

**Methods:** Thirty two 2<sup>nd</sup> year MD students of Ayurveda were enrolled for the study. Pretest MCQ and pre feedback forms are taken to check the previous knowledge about data entry, data analysis and its interpretation. After completing workshop, take post feedback and posttest. Analyze this data with paired t test and Wilcoxon signed rank test

**Result:** According to paired t test, mean marks of 32 students are increased in posttest (test statistic  $t = -10.418$ ,  $p$  value  $<0.001$ ). By Wilcoxon signed rank test, on the basis of overall feedback of student workshop is 88% effective ( $p$  value  $<0.05$ ).

**Conclusion:** A One day hand on training workshop helps to improve Statistical analysis skills of students

**KEY WORDS:** Research Methodology, Medical Statistics, Data entry, Data analysis

**INTRODUCTION:**

As per MUHS guidelines postgraduate students have the separate topic medical statistics for MD 1<sup>st</sup> year and they should complete the three days basic workshop on research methodology and medical statistics. With above training the postgraduate students should know the statistical analysis with data entry and its interpretation. In three years curriculum of post graduate courses they should complete one research work with statistical analysis before appearing for final year examination. But still students are not well verse with statistical

analysis. The topic taught at MD 1st year the post graduate students are not well familiar about data entry, selection of appropriate statistical test, data importing from excel to SPSS and use of the statistical software for data analysis.

So there is a need to develop and evaluate the one day hands on training workshop for statistical skills. Statistics is the most important part of the research so for improvement in statistical skills special one day hands on training workshop is developed.

In the present project the topic has been selected that the Evaluation of one day hands on training workshop for data entry data analysis and its interpretation by using statistical software for 2nd year post graduate students of Ayurveda.

### Goals of the project-

#### • Short term goals

- Evaluation of interactive model for better understanding of statistical analysis and its interpretation by using statistical soft wares
- PG Students will be well verse with all statistical skills as data entry in excel, importing data in SPSS, choosing appropriate statistical tests, data analysis and its interpretation

#### • Intermediate goals

- PG students will be able to do statistical analysis of different types of data by using SPSS
- will be able to know statistical soft wares as EXCEL, SPSS AND PRIMER
- Publication of evaluated one day hands on training workshop used for better understanding of statistical skills

#### • Long term goals

- Will able to work as guide for statistical analysis for research in Ayurveda
- Ayurveda community will be graced by many scientific publications with appropriate statistical analysis

### Specific objectives-

- PG students of Ayurveda will have 80% knowledge about data entry in excel and importing the data in SPSS with the one day hands on training workshop
- PG students of Ayurveda will be able to choose appropriate statistical test for their research work
- PG students of Ayurveda will be able to analyze at least own research data by using statistical software SPSS AND PRIMER at the end of one day hands on training workshop within fifteen days

### MATERIALS AND METHODOLOGY:

#### MATERIALS:

- Review material about types of data, excel, statistical software and interactive teaching techniques
- Thirty two 2nd year Post graduate students of Ayurveda
- Informed consent document
- Statistical skill evaluation questionnaire
- Module evaluation questionnaire
- MCQ for pre and post test
- Different types of Ayurveda research data bank
- Auditorium with A.V. Aids

#### Methodology-(project preparation)

- All aspects were reviewed from concern books, articles, web sites
- The informed consent document was prepared
- Different Ayurveda research data bank was created
- MCQ Pre and Posttest were formulated to check the knowledge about data entry, data analysis and its interpretation also the effectiveness of one day hands on training workshop
- Pre and post feedback forms were formulated to check the effectiveness of one day hands on training workshop
- All questionnaires were validated by experts for content analysis
- One day hands on training workshop evaluation questioner was formulated to know the response about one day hands on training workshop
- Protocol was submitted to IEC for approval.

#### Methodology-(Execution):

- Thirty two 2nd year MD students of Ayurveda were enrolled for the study with information about the project and consent for the project
- Pretest MCQ was conducted to check the previous knowledge about data entry, data analysis and its interpretation
- Pre feedback forms were taken to judge the students' knowledge regarding statistical skills

- After above test and feedback the students were exposed to one day hands on training workshop for data entry, data analysis and its interpretation

### One day hands on training workshop-

- Study Material on data types, selection of appropriate tests and software's were given to each participants in soft copies for pre reading
- Lecture was be taken by using audio visual aids with the help of appropriate examples of types of data, data entry in excel, importing the data in SPSS and Primer, choosing appropriate statistical tests and statistical analysis with its interpretation
- Small tasks were given with own research work as, recognize the types of data, enter the 10 cases data in excel sheet, import the data in SPSS and Primer to each delegate on their own laptop then instructed them to choose appropriate statistical test and do the analysis by using appropriate software with its interpretation.
- All above activities were taken after teaching and demonstrating each activity on

LCD one by one means after teaching types of data the activity was taken with their own research data.

- After the completion of one day hands on training workshop
- Post-test MCQ was be conducted to check the knowledge about statistical skills after teaching with one day hands on training workshop and also efficacy of one day hands on training workshop
- Post feedback forms also given to know the efficacy of one day hands on training workshop and improvement in statistical skills
- The feedback form about one day hands on training workshop was given to each student to know the response about the module

### Assessment criteria –

The pre and post feedback questionnaires were developed. Total 5 MCQ's were formulated. The responses were given Yes, No. and Not up to the mark for each MCQ. Based on the responses ranks were given as follows for statistical analysis.

**Table No. 1: Assessment criteria Based on the responses and ranks**

Responses	Rank
Yes	2
Not up to the mark	1
No	0

**Table No. 2: Effectiveness of one day hands on training workshop in terms of pre and post feedback**

Sr. No.	Questions	% Effect	Test Statistic (W)	P value
1.	Are you able to identify the type of data?	75	-4.443	< 0.001
2.	Are you able to enter the data in Excel for statistical analysis?	97	-5.052	< 0.001
3.	Are you able to use appropriate statistical software?	97	-5.200	< 0.001
4.	Are you able to choose the appropriate statistical test?	84	-4.681	< 0.001
5.	Are you able to interpret the results of output of statistical analysis?	91	-4.261	< 0.001

**Table No. 3: Effectiveness of one day hands on training workshop in terms of pre and post test**

MCQ test	Mean marks	S.D.	N	Test Statistic t	P value
Pre test	4.78	1.601	32	-10.418	<0.001
Post test	9.41	2.298	32		

Mean marks of students were increased in post test significantly (as p value <0.05)

### Statistical Analysis:

The pre and post feedback questionnaire were analyzed by Wilcoxon signed rank test in SPSS.

For testing the knowledge of 2<sup>nd</sup> year M.D. students of Ayurved, regarding statistical skills pre and posttest MCQ's were formulated. The marks obtained in pre and post test were out of 15. To find out the effectiveness of one day hands on training workshop based on these marks, paired t-test was applied in SPSS.

### RESULTS:

Total 32 post graduate students were attended this workshop. Effectiveness of this workshop was analyzed in terms of pre and post feedback questionnaire, pre and post MCQ test.

According to pre and post feedback questionnaire, each question showed effective result of workshop as per table no. 1

According to pre and post MCQ test result, workshop is helpful to increase the knowledge about statistical skills as per table no. 2

According to feedback of students regarding workshop, it was very useful to improve skills of statistical analysis as per figure 1 and 2

### CONCLUSION:

- One day hands on training workshop (One day training workshop) helps to improve Statistical analysis skills of students.
- From overall assessment criteria, a one day hand on training workshop is effective and the results are statistically significant.

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