

**A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF JIGSAW
TECHNIQUE AND PEER TUTORING ON EDUCATION OF MENSTRUAL SELF CARE
KNOWLEDGE AMONG THE ADOLESCENT GIRLS IN SELECTED GOVERNMENT
SCHOOLS OF DURG DISTRICT CHHATTISGARH**

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ABSTRACT

Cooperative learning is a method of education in which the learner is responsible not only for his learning but also for the learning of others, methods in cooperative learning include Jigsaw technique and peer tutoring Students learn passively in the lecture format and rely on teachers for knowledge acquisition, making it unsuitable for achieving the higher levels of knowledge. Jigsaw learning and peer tutoring encourages collaboration between learners for a deeper understanding of the subject and the facilitator role is relatively limited. This research entitled “A comparative study to assess the effectiveness of Jigsaw technique and Peer tutoring on education of menstrual self care knowledge among the adolescent girls in selected government schools of Durg District Chhattisgarh” carried out for the partial fulfilment of the requirement of the course Master's degree. Main aim is to compare the effectiveness of both the technique Jigsaw technique and peer tutoring on knowledge regarding menstrual self care among adolescent girls in selected schools of the Durg district(C.G). Variables, Dependent variables is knowledge and independent variable is jigsaw technique and peer tutoring .The pilot study was conducted in Two different government schools of rural area of Durg District (C.G.) 1)Arasnara Government school Patan Durg (C.G)(Jigsaw) 2) Chicha Government school Patan Durg (C.G)(peer tutoring) and the study sample was 24 that is 10% of the main study. The reliability of tool is computed by Karl Pearson Formula and the Research Design used is randomise Control Trial, with Parallel group design and target population is adolescent girl and accessible population is school going adolescent girl ,sampling technique was used is probability sampling ,simple random sampling technique with self structure questionnaire as a tool. On the basis of pre and post test Analysis of pilot study of sample size 24 ,reveals that t test scoring of jigsaw techniques is 6.68, mean 7.17 , p= 0.00003 and T test scoring of peer tutoring is 3.571, mean 4.17 ,p =0.00438from above result interpret that jigsaw technique is more effective as compared to the peer tutorial to enhance knowledge regarding menstrual self care among adolescent girls.

Key Words: Jigsaw Technique, Peer Tutoring, Menstrual Self Care Knowledge, Adolescent Girls

INTRODUCTION

**“Periods are something You hate to have but are scared not to have”
“Keep Menstrual self care right to make your future bright”**

BACKGROUND OF THE STUDY

Menstrual self care knowledge is the ability to care for the oneself through awareness, self control and self reliance in order to achieve, maintain or promote optimal health and well being which help to decrease the complications and to increase the knowledge and attitude .

The jigsaw technique is a cooperative learning method that makes students dependent on each other to succeed. It breaks classes into groups that each assemble a piece of an assignment and synthesize their work when finished[4][5]

Peer tutoring is a cooperative learning method where students are taught by their peers, who had been trained and supervised by the classroom teacher.[6]

SIGNIFICANCE OF STUDY

- No such study is conducted in India till date.
- Menstrual self care is a topic which is bounded by several taboos/cultural hesitation/stigma, to minimize cultural barriers.
- Jigsaw technique and peer tutoring in both the techniques no direct involvement of teacher.

AIM OF STUDY

Main aim is to compare the effectiveness of both the technique Jigsaw technique and peer tutoring on knowledge regarding menstrual self care among adolescent girls in selected schools of the Durg district(C.G).

OBJECTIVES OF THE STUDY

- To assess the pretest knowledge score regarding menstrual self care among adolescent girls.
- To evaluate the effectiveness of peer tutoring on knowledge regarding menstrual self care among adolescent girls.
- To evaluate the effectiveness of the jigsaw technique on knowledge regarding menstrual self care among adolescent girls.

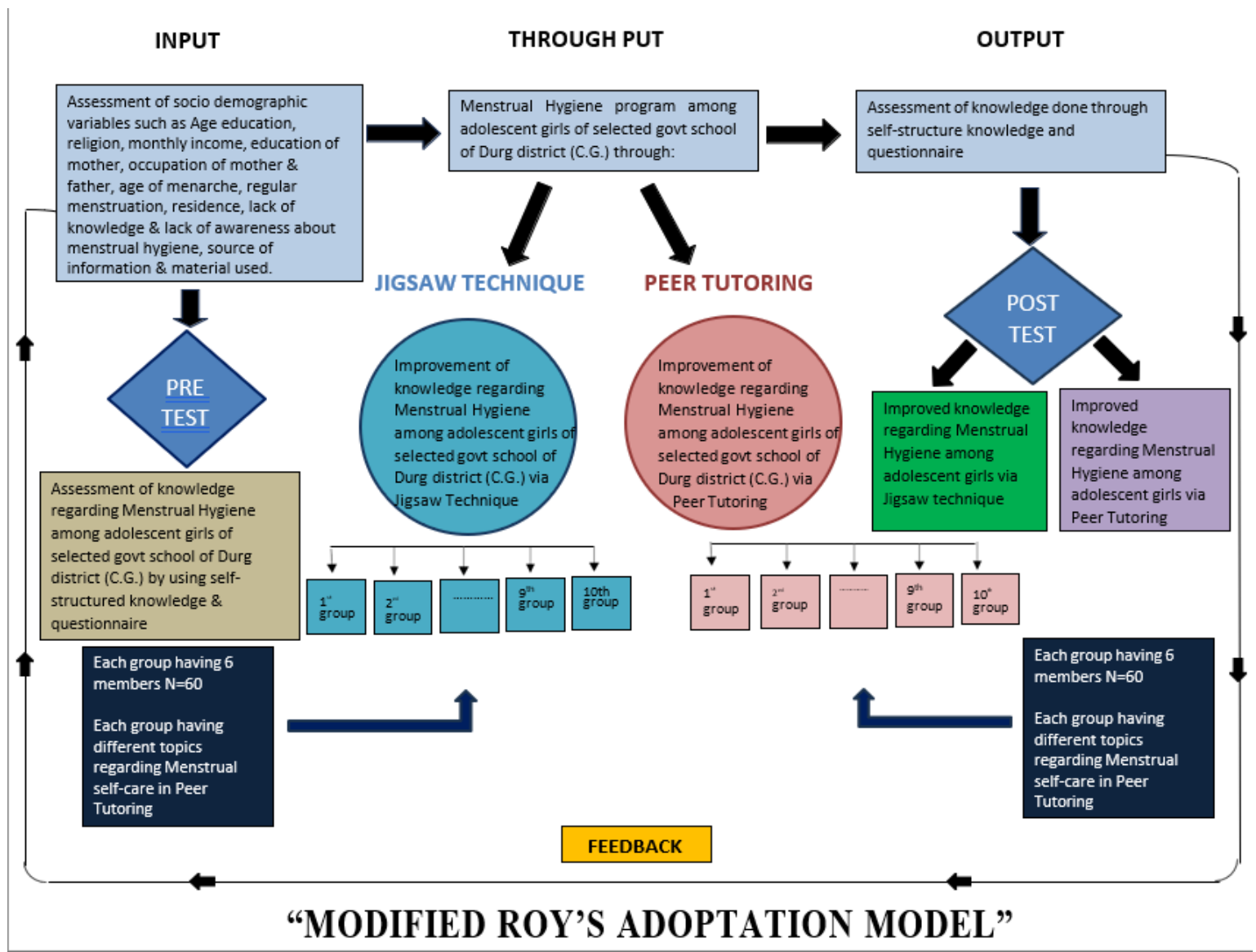
- To compare the effectiveness of both the technique on knowledge regarding Menstrual self care among adolescent girls in selected school of the Durg district(C.G).
- To find association between pretest knowledge score regarding menstrual self care among adolescent girls and selected demographic variables.

VARIABLES

Independent variables : Jigsaw Techniques and Peer Tutoring

Dependent variables: Knowledge regarding menstrual self care

CONCEPTUAL FRAMEWORK:



INCLUSIVE CRITERIA

1. Only school going adolescent girls.
2. Class range from 6th to 8th.
3. Experience of Menstruation.
4. Willingness to join the study.
5. Had no previous exposure to the jigsaw technique as well as peer tutoring.
6. Those who understand both Hindi and English.

EXCLUSIVE CRITERIA

1. Those student who were absent
2. Having any sort of disease condition.

DELIMITATIONS OF STUDY

- The study is limited to the selected government schools of Durg District.
- The study is delimited to the school girls who are studying in 6th to 8th standard at selected Government schools of Durg District.
- Period of the research study.
- The study is limited to assess knowledge regarding menstrual self care.

PROJECT OUTCOME

By this study the effectiveness of jigsaw technique and peer tutoring can be evaluated and compared, which help to find its impact on the knowledge regarding menstrual self care of the adolescent school going girls ,to promote good health.

RESEARCH METHODOLOGY

Research methodology consist of the systematic procedure adopted dollar research which starts from the initial identification of research approach you continue till completing pilot study and collection of relevant tapes this is one of the important part of research if it plans scientifically then outcome of research will meet the determined objectives of research with zero or minimum bias

RESEARCH APPROACH: Quantitative research approach

RESEARCH DESIGN : Randomized control trial ,Parallel group design

TARGET POPULATION : Adolescent girls

ACCESSIBLE POPULATION : School going adolescent girls of selected government schools of Durg District(C.G.)

SETTING : Two different government schools of rural area of Durg District (C.G.)

- Arasnara Government school Patan Durg (C.G)(Jigsaw)
- Chicha Government school Patan Durg (C.G)(peer tutoring)

SAMPLING TECHNIQUE: Sampling technique used is **Probability Sampling** ,Simple Random sampling technique

SAMPLE SIZE : Sample size is determined on the basis of previous study(N=120)

60 For experiment group I (jigsaw technique) and 60 for experiment group II(peer tutoring)

SAMPLE SIZE FOR PILOT STUDY(N=10% OF TOTAL SAMPLE SIZE)*

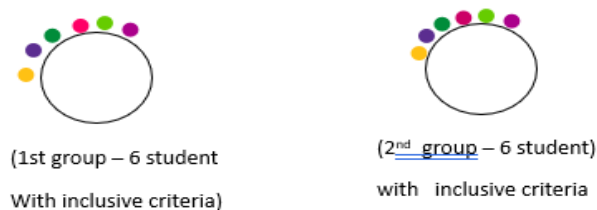
12 For experiment group I (jigsaw technique) and 12 for experiment group II(peer tutoring)

DATA COLLECTION METHOD : Self Structured Questionnaire

Total No. of Sample for both technique = 24

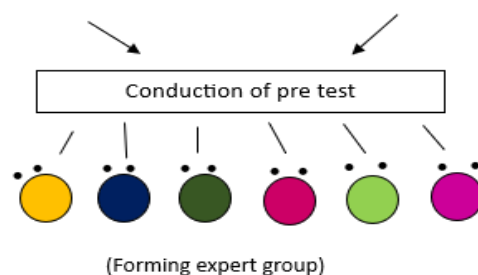
Diagrammatic Representation of Jigsaw Technique (Pilot Study)

No. of sample N=12



Each chunk is divided to each student in a group. Total no. of chunks

- 6

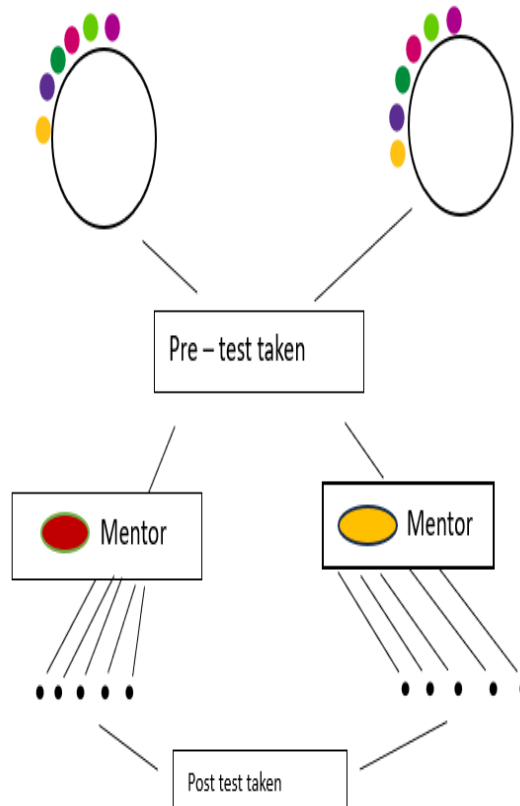


(post test Conducted after one week week of pre test)

Diagrammatic presentation of peer tutoring (Pilot Study)

No. of sample $N=12$

Mentor selection on the basis of marks obtained in pre test and class teacher bright student recommendation



ETHICAL CONSIDERATION

- Obtaining ethical approval from institutional ethical committee [IEC].
- Taking informed consent from participants.
- Avoiding error in data collection .
- Obtaining the permission from competent authority of a particular institution or area to conduct the pilot and main study .
- Doing justice to participants in analysing data.
- Maintaining confidentiality of the participants.

PRE TEST CONDUCTED : On both the group at different time at different settings

PEER TUTORING : 2 groups each group consist of 6 students



JIGSAW TECHNIQUE : 2 groups each group consist of 6 students



POST TEST CONDUCTED (After 1week) : Post test was conducted after 7 days

CRITERION MEASURES FOR SELF STRUCTURED QUESTIONNAIRE

SNO	CRITERION	SCORING
1	GOOD	25-36
2	AVERAGE	13-24
3	BELOW AVERAGE	1-12

PRE-POST TEST SCORING

Reliability of Tools (statistical calculation)						
by test - retest						
x (pretest)	y (post test)	xy	X ²	Y ²		
15	18	270	225	324		
14	19	266	196	361		
11	20	220	121	400		
13	19	247	169	361		
15	20	300	225	400		
10	19	190	100	361		
10	19	190	100	361		
8	16	128	64	256		
11	16	176	121	256		
20	22	440	400	484		
4	20	80	16	400		
11	20	220	121	400		
19	21	399	361	441		
19	20	380	361	400		
23	23	529	529	529		
16	18	288	256	324		
22	28	616	484	784		
20	22	440	400	484		
9	22	198	81	484		
17	18	306	289	324		
25	29	725	625	841		
9	20	180	81	400		
17	21	357	289	441		
18	22	396	324	484		
Σ 356	Σ 492	Σ 7640	Σ 5938	Σ 10300		
Σ x	Σ y	Σ xy	Σ x ²	Σ y ²		

CHECKING RELIABILITY OF TOOL BY TEST -RE TEST METHOD*

(Karls pearsons correlation coefficient)

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2) (n \sum y^2 - (\sum y)^2)}}$$

RELAIBLTY OF MY TOOL IS 0.91

CALCULATION OF RELIABILITY FOR TOOLS (TEST -RETEST METHOD)

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2) (n \sum y^2 - (\sum y)^2)}}$$

$$r = \frac{24 \times 7640 - 356 \times 492}{\sqrt{(24 \times 5938 - (356)^2) (24 \times 10300 - (492)^2)}}$$

$$r = \frac{183360 - 175152}{\sqrt{(142512 - 126736)(247200 - 242064)}}$$

$$r = \frac{8208}{\sqrt{15776 \times 5136}}$$

$$r = \frac{8208}{\sqrt{81025536}}$$

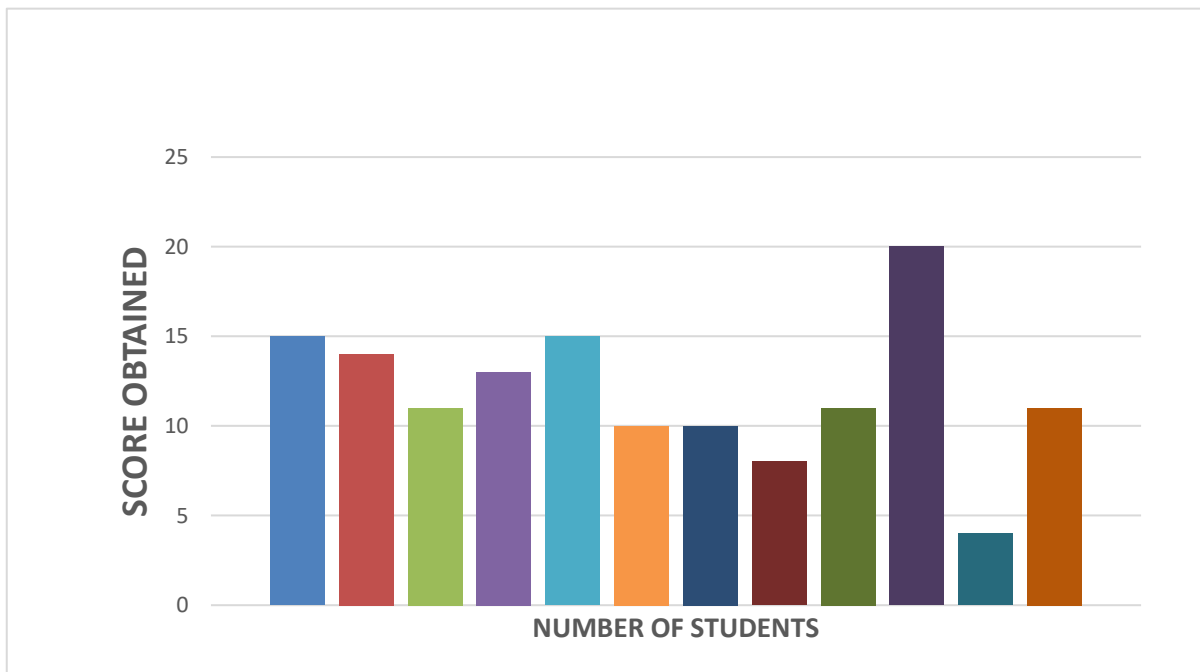
$$r = \frac{8208}{9001.4}$$

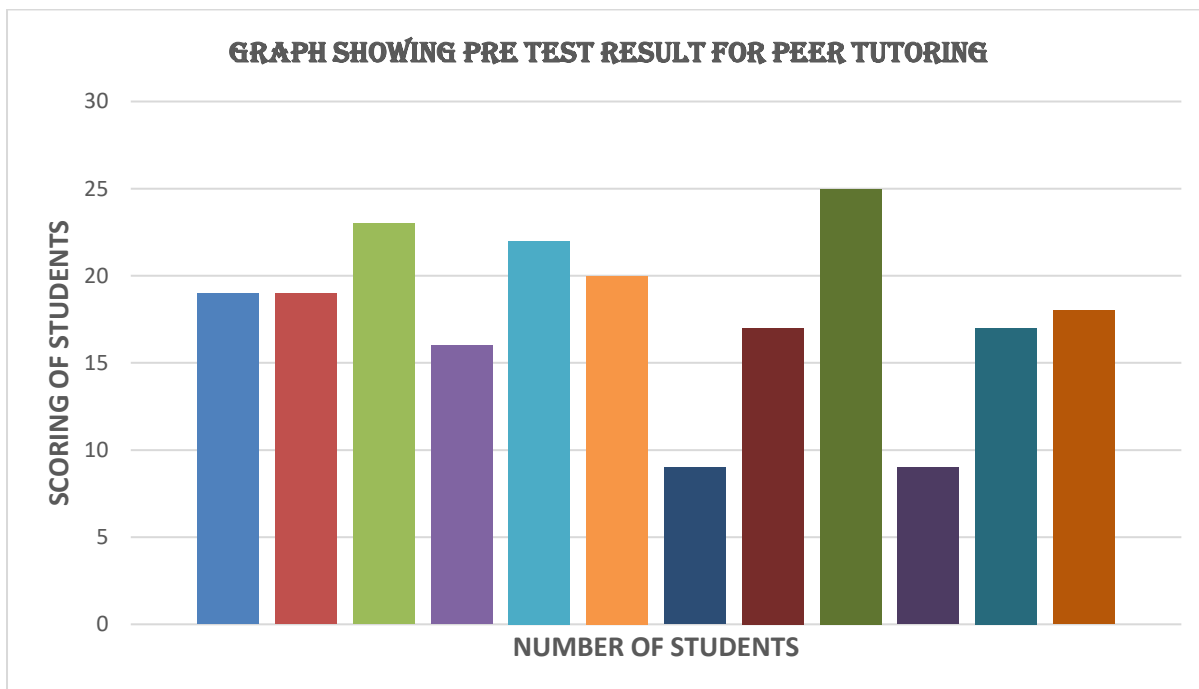
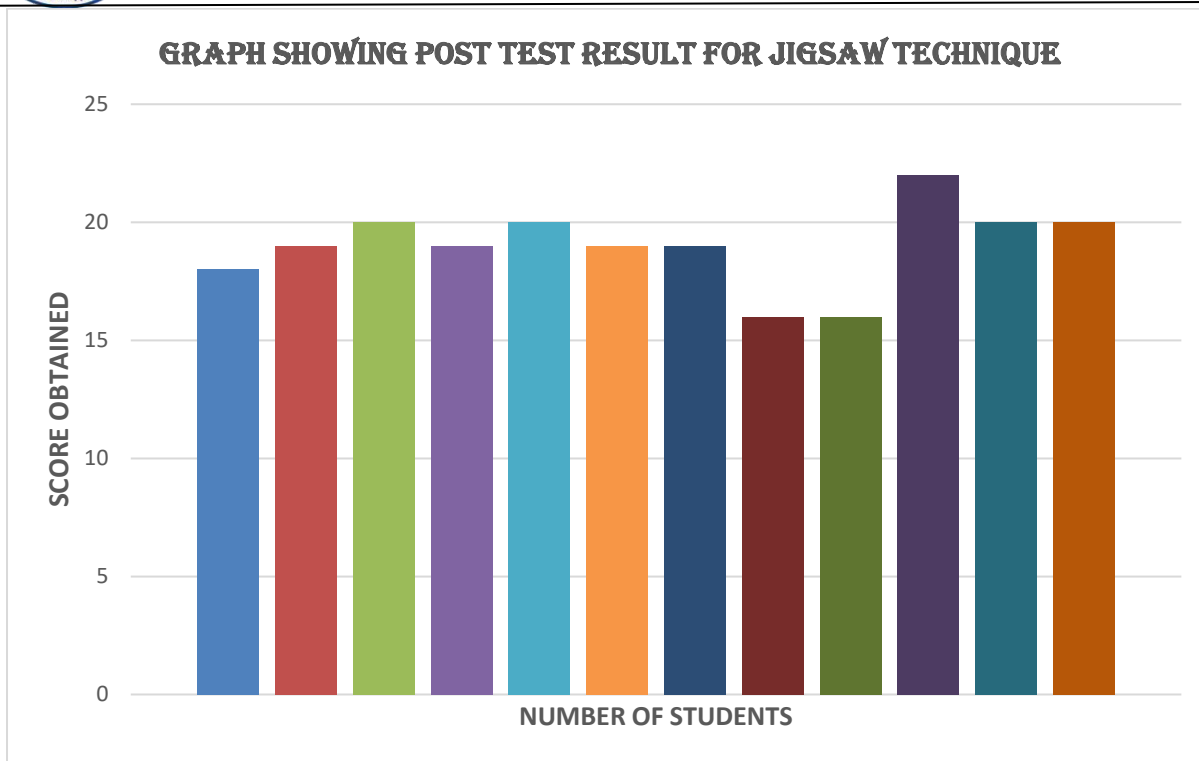
$$r = 0.91$$

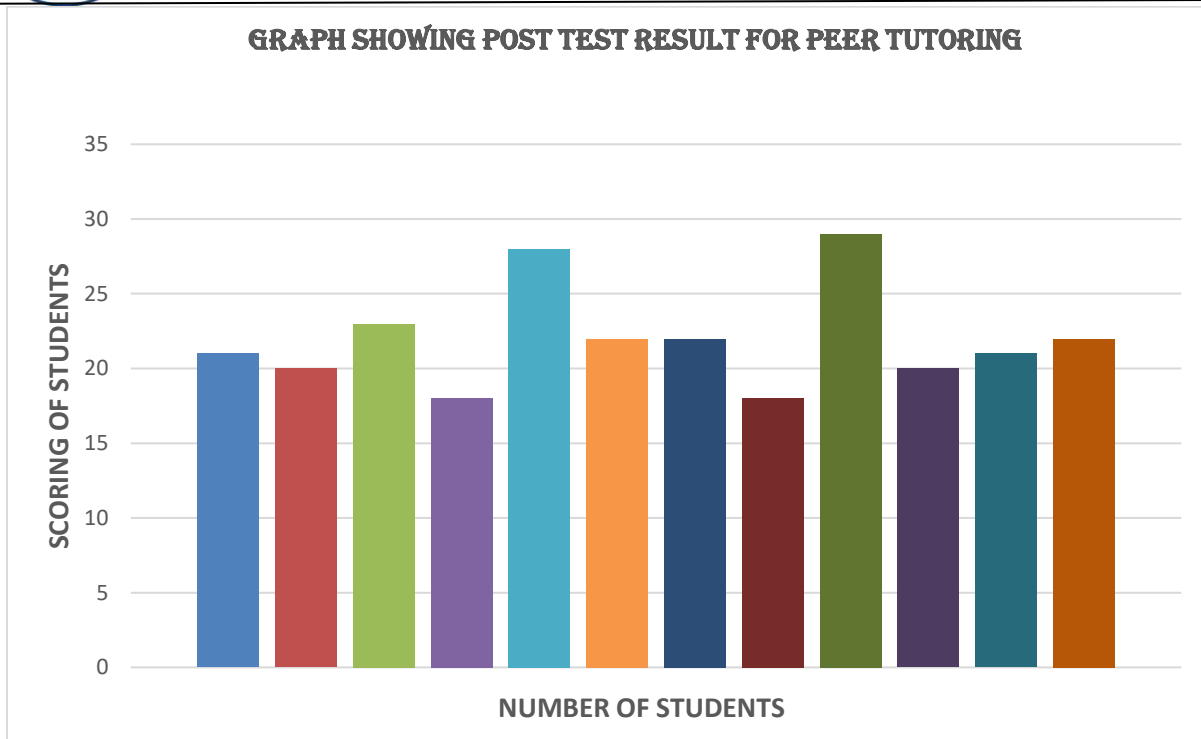
The result of the correlation coefficient is **0.91** and score **above 0.70** indicates an acceptable level of reliability of a tool, so my tool for this research study is reliable.

DATA ANALYSIS AND INTERPRETATION:

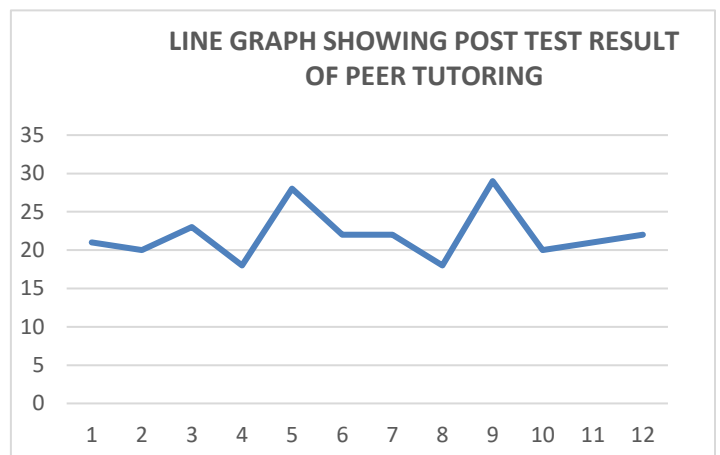
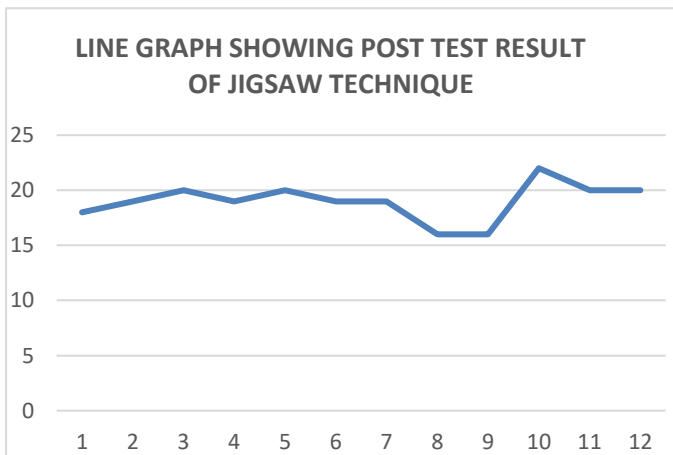
GRAPH SHOWING PRE TEST RESULT FOR JIGSAW TECHNIQUE







COMPARISON BETWEEN POST TEST RESULTS BOTH THE TECHNIQUES BY LINE GRAPH



ANALYSIS OF PILOT STUDY { JIGSAW TECHNIQUE }

Treatment 1	Treatment 2	Diff(T2 - T1)	Dev(Diff - M)	Sq. Dev
15	18	3	-4.17	17.36
14	19	5	-2.17	4.69
11	20	9	1.83	3.36
13	19	6	-1.17	1.36
15	20	5	-2.17	4.69
10	19	9	1.83	3.36
10	19	9	1.83	3.36
8	16	8	0.83	0.69
11	16	5	-2.17	4.69
20	22	2	-5.17	26.69
4	20	16	8.83	78.03
11	20	9	1.83	3.36
		M: 7.17		S: 151.67

Significance Level:

- 0.01
- 0.05
- 0.10

One-tailed or two-tailed hypothesis?:

- One-tailed
- Two-tailed

Difference Scores Calculations

Mean: 7.17
 $\mu = 0$
 $S^2 = SS/df = 151.67/(12-1) = 13.79$
 $S^2_M = S^2/N = 13.79/12 = 1.15$
 $S_M = \sqrt{S^2_M} = \sqrt{1.15} = 1.07$

T-value Calculation

$t = (M - \mu) / S_M = (7.17 - 0) / 1.07 = 6.69$

The value of *t* is 6.685888. The value of *p* is .00003. The result is significant at *p* < .05.

As shown above Interpretation drawn that T value is more than the table value which signifies that the null hypothesis is rejected similarly the P value is less than the table value it signifies that the Null Hypothesis is rejected and the result is significant and Technique is reliable in increasing the knowledge .

There is a significant difference between before and after the intervention ,hence jigsaw technique is effective in increasing the knowledge level regarding menstrual self care among adolescent girls .

ANALYSIS OF PILOT STUDY { PEER TUTORING }

Treatment 1	Treatment 2	Diff(T2 - T1)	Dev(Diff - M)	Sq. Dev
19	21	2	-2.17	4.69
19	20	1	-3.17	10.03
23	23	0	-4.17	17.36
16	18	2	-2.17	4.69
22	28	6	1.83	3.36
20	22	2	-2.17	4.69
9	22	13	8.83	78.03
17	18	1	-3.17	10.03
25	29	4	-0.17	0.03
9	20	11	6.83	46.69
17	21	4	-0.17	0.03
18	22	4	-0.17	0.03
		M: 4.17		S: 179.67

Significance Level:

- 0.01
- 0.05
- 0.10

One-tailed or two-tailed hypothesis?:

- One-tailed
- Two-tailed

Difference Scores Calculations

Mean: 4.17
 $\mu = 0$
 $S^2 = SS/df = 179.67/(12-1) = 16.33$
 $S^2_M = S^2/N = 16.33/12 = 1.36$
 $S_M = \sqrt{S^2_M} = \sqrt{1.36} = 1.17$

T-value Calculation

$t = (M - \mu) / S_M = (4.17 - 0) / 1.17 = 3.57$

The value of *t* is 3.571429. The value of *p* is .00438. The result is significant at *p* < .05.

As shown above Interpretation drawn that T value is more than the table value which signifies that the null hypothesis is rejected similarly the P value is less than the table value it signifies that the Null Hypothesis is rejected and the result is significant and Technique is reliable in increasing the knowledge .



There is a significant difference between before and after the intervention ,hence peer tutoring is effective in increasing the knowledge level regarding menstrual self care among adolescent girls .

CONCLUSION OF PILOT STUDY

- From above analysis of data we will conclude that both the techniques, jigsaw technique and peer tutoring are effective in increasing the knowledge regarding menstrual self care among adolescent girls.
- But when we compare both the techniques ,then from above analysis we conclude that **JIGSAW TECHNIQUE** is more effective as compared to peer tutoring in increasing from knowledge regarding menstrual self care among adolescent girl.

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