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Effectiveness of flipped classroom teaching method on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students in selected college Indore.

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BACKGROUND AND CONTEXT

Deep vein thrombosis (DVT) is a medical condition that occurs when a blood clot forms in a deep vein. These clots usually develop in the lower leg, thigh, or pelvis, but they can also occur in the arm. It is important to know about DVT because it can happen to anybody and can cause serious illness, disability, and in some cases, death. Venous thromboembolism (VTE) is a major global burden with a prevalence of approximately 10 million cases yearly, thereby representing the third leading vascular disease after myocardial disease and stroke. Thrombo-embolism is a frequent and well-known complication in hospitalized patients. Several million in patients are considered at high risk of deep vein thrombosis (DVT) every year worldwide with life- threatening complications such as pulmonary embolism.

Wells score which takes into account various aspects in the history as well as various clinical signs which can help the clinician to arrive at a diagnosis of deep vein thrombosis (DVT). This helps to save time and money that is wasted in doing many unnecessary investigations. Aim of the study was to test the application of the Wells score in our clinical set up and to see how
effectively we can diagnose DVT. Wells scores were calculated retrospectively for all patients who were admitted to the trauma service and underwent Venous Duplex Scanning (VDS).

NEED FOR THE STUDY:

▶ Phlebothrombosis is a disease which remains symptom free till complications like pulmonary embolism becomes obvious. It was considered that the efficient return of

blood from the veins of the extremities depends on various factors. The disturbance of any one or a

▶ combination of these factors may result in sufficient stasis to produce phlebothrombosis.

▶ Phlebothrombosis of deep veins is clinically silent and manifests only as its complications.

▶ Deep vein thrombosis (DVT) is a preventable condition that causes significant morbidity and mortality. Statistics show that complications from DVT kills more people than breast cancer and AIDS combined. 2 Current contraindications against initiation of prophylaxis
against DVT (with low molecular weight heparin (LMWH)) include intracranial bleed, internal bleeding from the raw wounds and operated sites bleed, spinal bleeding following spinal anesthesia and spinal injury due to hematoma. The DVT results in the patient suffering which is significantly higher in the post op period or during period of hospitalization. This causes significant raise in the expense to the patient due to prolonged period of stay in the hospital and also ends in wastage of precious hospital
resources and manpower.

Problem statement

A study to evaluate the effectiveness of flipped classroom teaching method on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students in selected college Indore.

Research Objective

1. To analyze the pre-test score on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students.

2. To develop and implement the flipped classroom teaching method on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization.

3. To assess the post-test score on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students.

4. To determine the impact of flipped classroom teaching method on knowledge regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students.

5. To find out the association between post-test knowledge score regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2 nd year and 3rd year students with their socio demographic variables.

HYPOTHESIS :

▶ (At 0.5 level of significance)

▶ H01- There will be no significant association between pre test and post test knowledge score on Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students.

▶ H02 -There will be no significant association between post-test knowledge score regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. Nursing 2nd year and 3rd year students with their socio demographic variables.

ASSUMPTIONS

▶ The study assumes that:-

· Students will have some knowledge on Wells score for Deep vein thrombosis (DVT).

· The flipped classroom teaching method will increase the knowledge score of students regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization.

OPERATIONAL DEFINITION :

Effectiveness – it refers to the extent to which the students have gained skill and self- awareness regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization after flipped classroom is a teaching method by their correct responses to the structured knowledge questionnaire.

Flipped classroom: - A flipped classroom is a teaching method in which the students learn about Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization by referring online and books then discuss it in the classroom.

Knowledge- A state of awareness or understanding with conscious mind, in this study knowledge refers to awareness or understanding of students about the Wells score for Deep vein thrombosis (DVT) by their correct responses to the structured knowledge questionnaire.

Wells score for Deep vein thrombosis (DVT):- The Wells score is a number that reflects your risk of developing deep vein thrombosis (DVT). DVT happens when a blood clot forms in a vein that & deep inside your body, usually in your leg. Your Wells score is calculated based on several factors.

B.Sc. Nursing 2nd and 3rd year Students- B. Sc in Nursing is an undergraduate course that all medical aspirants and it offered as a 4-year undergraduate programme, students who are study in 2nd year.

DELIMITATION :

This study will be delimitated to fulfill the inclusion criteria of the study i.e.-

1. Students present at the time of study.
2. Students who will be able to read and speak in English.
3. The study sample size will be 50 students.
4. Students who will be regular in B.Sc. Nursing 2nd year course.

LIMITATIONS:

This study will be limited to- Students who are:-

1. Not present at the time of study.
2. Not co-operative at the time of study.
3. Not interested to take part in study.

RESEARCH DESIGN:-

RESEARCH APPOROACH
Quantitative research approach

RESEARCH DESIGN
Pre- experimental one group pre-test, research design

POPULATION
B.sc. nursing 2nd year and 3rd year

TARGET POPULATION
50 B. Sc. Nursing students

ACCESSIBLE POPULATION
B.Sc. nursing students of selected college of nursing

SAMPLE TECHNIQUE/ SAMPLE/ SAMPLE SIZE/ SETTING
Non-Probability purposive simple random technique,50 B.Sc. nursing students of selected college of Nursing, Indore

TOOLS FOR DATA COLLECTION
Socio-demographic variables and structured questionnaire

PRE-TEST
Administration of structured knowledge questionnaire

POST-TEST
Administration of structured knowledge questionnaire

INTERVENTION
Flipped classroom

DATA ANALYSIS AND INTERPRETATION
Discriptive and inferential static

REPORT WRITING

RGANIZATION AND PRESENTATION STUDY FINDING

▶ The findings of the study are organized according to sequence of the objectives of the study. The data was edited, tabulated, analysed interpreted presented in the form of tables

and figures. The data presented under the following headings**.**

▶ **Section –A:** Frequency and percentage distribution of selected socio demographic variables.

▶ **Section – B:** Frequency and percentage distribution of pre test knowledge score

► **Section – C:** Frequency and percentage distribution of post test knowledge score **.**

► **Section –D:** Comparison of mean difference, standard deviation and t- test value of pre and post – knowledge regarding wells score for DVT among B.Sc. (N) 2nd year and 3rd year students

► **Section-E:** Association of pre-test knowledge score of students with selected socio- demographic variables score regarding well's Score for Deep Vein Thrombosis among

B.Sc. Nursing 2nd year and 3rd year.

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOCIO- DEMOGRAPHIC VARIABLES.

S.NO	SOCIO- DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1)	AGE		
	18-19	17	34%
	20-21	29	58%
	22-23	4	8%
	24-25	0	0%
2)	RELIGION		
	Hindu	34	68%
	Muslim	0	0%
	Christian	16	32%
	Other	0	0%
3)	TYPE FAMILY		
	Joint	13	26%
	Nuclear	37	74%
	Divorce	0	0%
	Separate	0	0%
4)	PREVIOUS KNOWLEDGE		
	clinical exposure	17	34%
	Newspaper	2	4%
	workshop or attend seminar	11	22%

	none of above	10	20%
	all of the above	10	20%

Table No. 4.1.1 Frequency and percentage distribution of Age of B.Sc. (N) 2nd year and 3rd year students: -

1)	AGE	Frequency	Percentage Distribution
	18-19	17	34%
	20-21	29	58%
	22-23	4	8%
	24-25	0	0%

The above table depicts frequency and percentage distribution of demographic variables of B.Sc. nursing 2nd year and 3rd year students in Bombay Hospital College of Nursing Indore who were taken as research sample to assess the effectiveness of flipped classroom regarding Wells score for DVT.

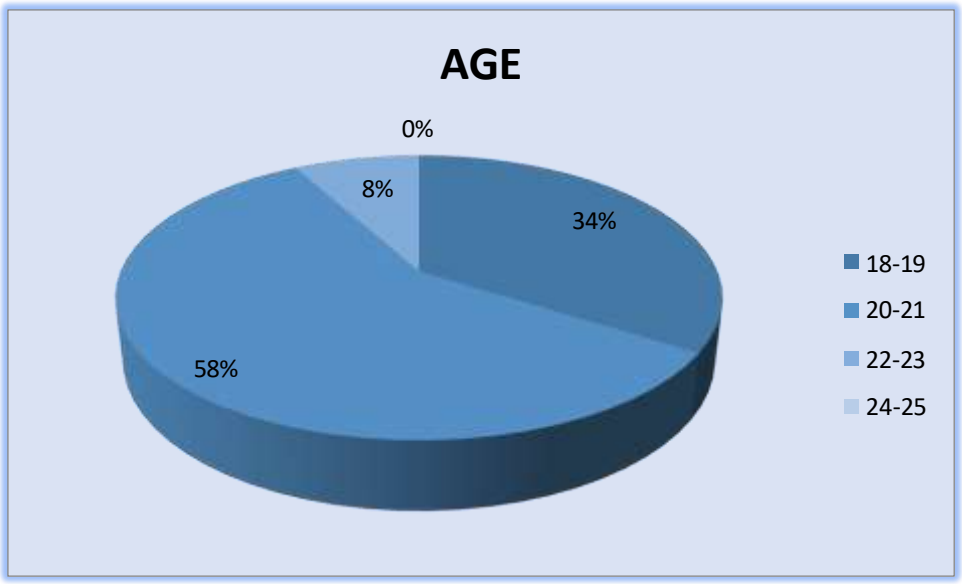


Table No. 4.1.2 Frequency and percentage distribution of Religion of B. Sc. (N) 2nd year and 3rd year students:-

2)	RELIGION	FREQUENCY	PERCENTAGE
	Hindu	34	68%
	Muslim	0	0%
	Christian	16	32%
	Other	0	0%

The above table depicts frequency and percentage distribution of demographic variables (RELIGION) of B.Sc. nursing 2nd year and 3rd year students in Bombay Hospital College of Nursing Indore who were taken as research sample to assess the effectiveness of flipped classroom regarding Wells score for DVT.

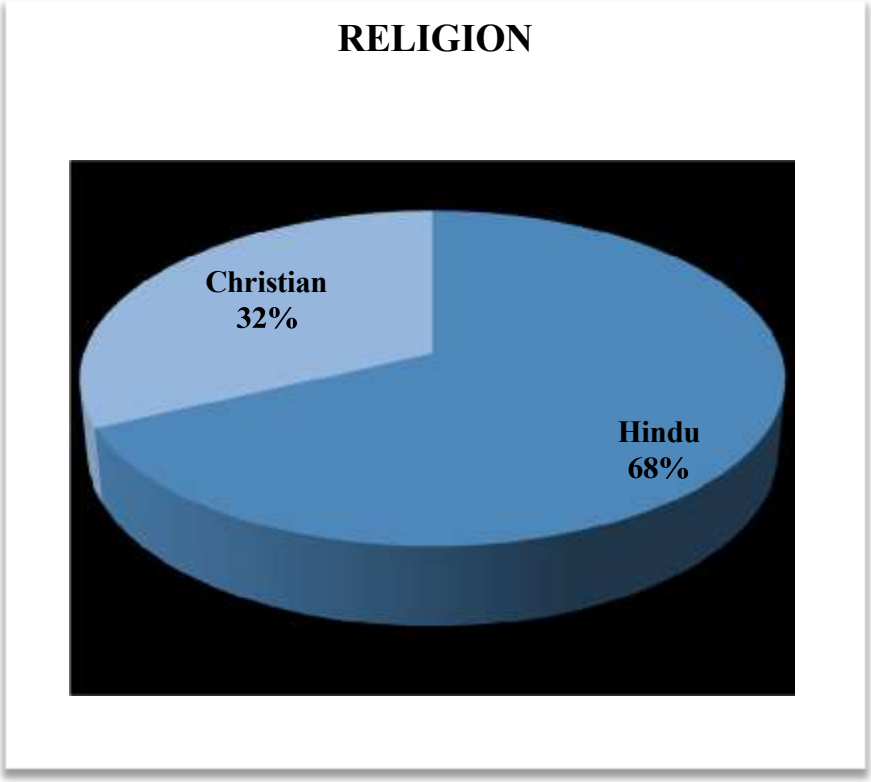


Table No. 4.1.3 Frequency and percentage distribution of Type of Family B. Sc. (N) 2nd year and 3rd year students:-

3)	TYPE FAMILY	FREQUENCY	PERCENTAGE
	joint	13	26%
	Nuclear	37	74%
	Divorce	0	0%
	Separate	0	0%

The above table depicts frequency and percentage distribution of demographic variables (TYPE FAMILY) of B.Sc. nursing 2nd year and 3rd year students in Bombay Hospital College of Nursing Indore who were taken as research sample to assess the effectiveness of flipped classroom regarding Wells score for DVT.

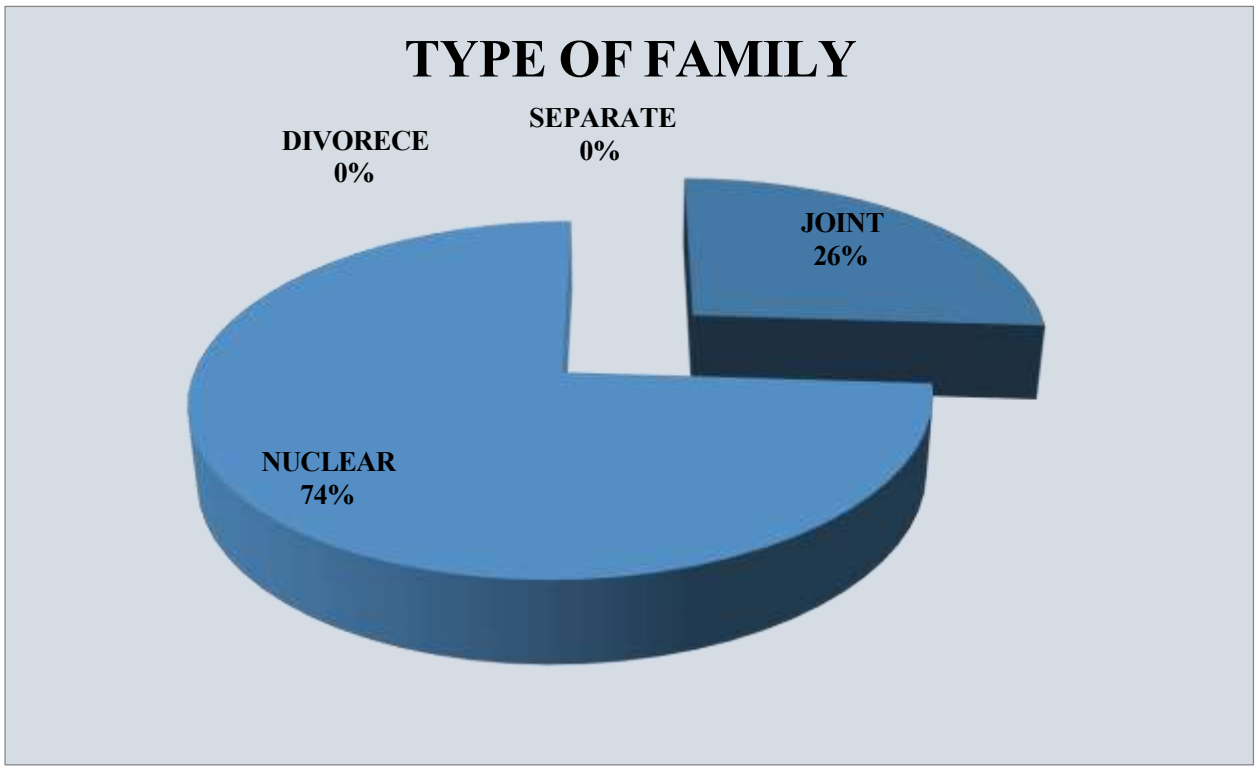
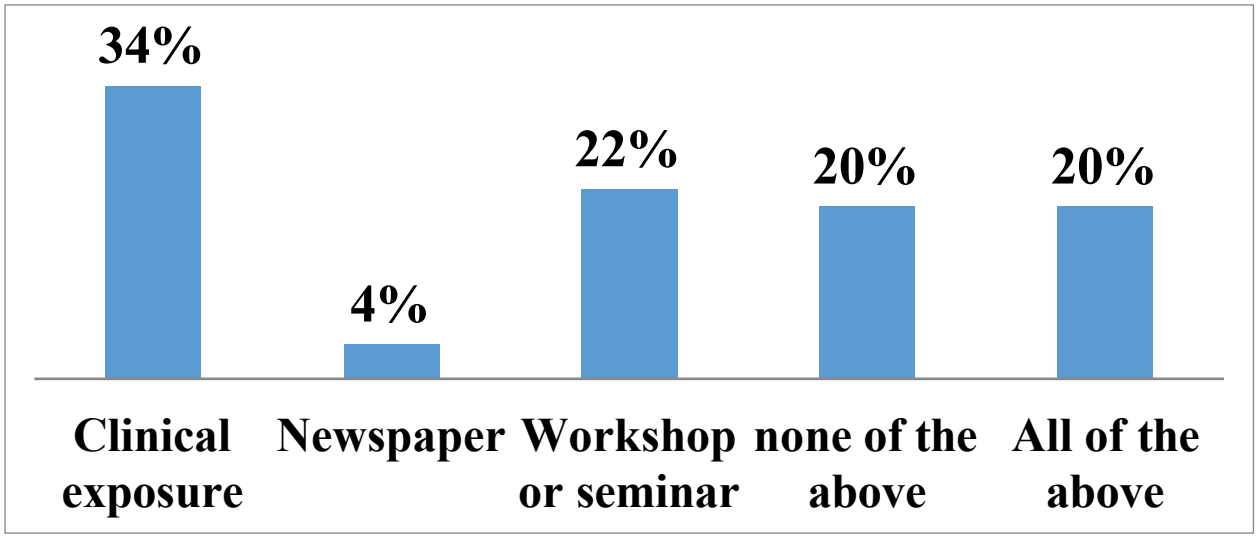


Table No. 4.1.3 Frequency and percentage distribution of Previous Knowledge

B. Sc. (N) 2nd year and 3rd year students: -

4)	PREVIOUS KNOWLEDGE	FREQUENCY	PERCENTAGE
1	Clinical exposure	17	34%
2	Newspaper	2	4%
3	Workshop or attend seminar	11	22%
4	None of above	10	20%
5	All of the above	10	20%

The above table depicts frequency and percentage distribution of demographic variables (PREVIOUS KNOWLEDGE) of B.Sc. nursing 2nd year and 3rd year students in Bombay Hospital College of Nursing Indore who were taken as research sample to assess the
effectiveness of flipped classroom regarding Wells score for DVT.



SECTION-B

ASSESSMENT OF THE PRE-TEST KNOWLEDGE SCORE OF B.sc (N) 2ND YEAR AND 3RDYEAR STUDENTS.

This section deals with the assessment of the pre-test and post-test knowledge score of B. Sc Nursing 2nd year and 3rd year students of Bombay hospital college of Nursing Indore.

TABLE 4.2: Frequency and percentage distribution of the pre interventional knowledge of B. Sc Nursing 2nd year and 3rd year students of Bombay hospital college of Nursing Indore.

SCORE	GRADIN G	PRE-TEST			
	FREQUEN CY (f)		PRECENTAGE (%)	MEAN	SD
1-7	POOR	12	24%	11.22	4. 16
8-13	AVERAG E	24	48%		
14-18	GOOD	11	22%		
19-26	EXCELL ENT	3	6%		

The above table shows that majority 24 (48%) of students had average knowledge between 8-13, where 12 (24%) scored between 1-7 which was in the below average knowledge score, 11(22%) of students had good knowledge between 14-18, and 3 (6%) of students had excellent knowledge between 19-26.

SECTION: C

ASSESSMENT OF THE POST- TEST KNOWLEDGE SCORE OF B. Sc. (N) 2ND YEAR AND 3RD YEAR STUDENTS.

This section deals with analysis and interpretation of the data in order to evaluate the effectiveness of flipped classroom DVT.

Table 4.3: Frequency and percentage distribution of the post interventional knowledge of B. Sc Nursing 2nd year and 3rd year students of Bombay hospital college of Nursing Indore.

SCORE	GRADING	POST-TEST			
		FREQUENCY (f)	PRECENTAGE (%)	MEAN	SD
1-7	POOR	0	0%	22.48	2. 21
8-13	AVERAGE	0	0%		
14-18	GOOD	2	4%		

19-26	**EXCELLENT**	**48**	**98%**	

The above table shows that majority 48 (98%) of students had excellent knowledge between 19- 26, where 2 (4%) of students had good knowledge between 14-18, after the implementation of flipped classroom.

SECTION:D

COMPARISON OF PRE AND POST INTERVENTIONAL KNOWLEDGE REGARDING WELLS SCORE FOR DEEP VEIN THROMBOSIS AMONG B.Sc. NURSING 2ND YEAR AND 3RD YEAR STUDENTS.

This section deals with the comparison of mean, mean difference, standard deviation and t-value of pre- test and post-test knowledge score in order to assess the effectiveness of flipped classroom regarding wells score for Deep Vein Thrombosis among B.Sc. nursing 2nd year and 3rd year students of selected college of Indore.

Table 4.4: comparison of pre and post interventional knowledge.

KNOWLEDGE	MEAN	MEAN DIFFERENCE	MEAN PERCENTAGE	SD	"t" VALUE
Pre test	**11.22**	**11.26**	**22.32**	**4. 16**	**16.9042**
Post test	**22.48**		**44.96**	**2. 21**	

*significant at p<0.05 level

The above table findings calculated "t" value 28.531 is higher than "p" value at 0.05 level of significance. presented in the table shows that mean post interventional knowledge (22.48) is apparently6 higher than mean pre interventional knowledge (11.22). The mean difference of pre interventional knowledge and post interventional knowledge is (11.26) the computed "t" value 28.531is higher than "p" value at 0.05 level of significance. Shows that there is a significant different of pre interventional knowledge and post interventional knowledge. This indicates that the flipped classroom regarding wells score for DVT is effective to increase the knowledge of B.Sc. nursing 2nd year and 3rd year students.

The table revealed that the mean post interventional knowledge percentage 44.96 is apparently higher than the mean pre interventional knowledge percentage. Improvement mean percentage (22.3%) obtained for pre and post

interventional knowledge with "t" value of 28.531at p<0.05 level of significance. It reveals there is an enhancement of knowledge indicating the
effectiveness of flipped classroom regarding wells score for DVT.

Hence, the hypothesis H02 is retained, stating that, there is no significant association between mean of pre- test knowledge score and their selected socio demographic variables regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. using 2 ^ (nd) year and 3 ^ (rd) year students.

(The mean post interventional knowledge is significantly higher than the mean pre interventional knowledge at p < 0.05 level of significance.)

4.6 HYPOTHESIS TESTING

H01: There is no significant difference between mean pre-test and post-test knowledge score on literature mapping among B.Sc. Nursing 2nd year and 3 ^ (nd) year students

H1: There is significant difference between mean pre-test and post-test knowledge score for well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year students. In
result it was reflected that calculated paired T test value is 28.531, which was compared with the table value at 0.05 level of significance which shows that the calculated value was much higher than the table value. So, the researcher rejecting the null hypothesis stating "There is no significant difference between mean pre-test and post-test knowledge score for Well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year students.

H02 is retained, stating that, there is no significant association between mean of pre- test knowledge score and their selected socio demographic variables regarding Wells score for Deep vein thrombosis (DVT) in clinical setting and its utilization among B.Sc. nursing 2nd year and 3rd year students.

SECTION-E

Section-E: Association of pre-test knowledge score of students with selected socio-demographic variables score regarding well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year.

In Religion x^2 value is (1.071) and table value is (0.05). In Type of Family x 2 value is (1.4696) and table value is (0.05). In Previous Knowledge x 2 value is (12.796), table value is (0.05).
None of the demographic variables are found as significant with the pre-test knowledge score.

H02: There is no significant association between the mean of pre-test knowledge

Score regarding literature mapping among B.Sc. Nursing 2nd year and 3 year students with their selected socio demographic variables
The table value is higher than the calculated value at 0.05 level of significance. So, the researcher forced to retained the null hypothesis stating "There is no significant association between the mean of post-test knowledge score regarding well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year students with their

selected socio demographic
variables".

RESEARCH FINDINGS

➢ "There is significant difference between mean pre-test and post-test knowledge score for Well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year students." In result it was reflected that calculated paired T test value is **16.9042**, which was compared with the table value at 0.05 level of significance which shows that the calculated value was much higher than the table value. So, the researcher rejecting the null hypothesis.

➢ "There is no significant association between the mean of post-test knowledge score regarding Well's Score for Deep Vein Thrombosis among B.Sc. Nursing 2nd year and 3rd year students with their selected sociodemographic variables". The table value is higher than the calculated value at 0.05 level of significance. So, the researcher is forced to retain the null hypothesis.

RECOMMENDATIONS

Based on the findings, following recommendation are made;

1) A similar study can be done on a larger sample to generalize the findings.

2) A pre experimental study can be undertaken with a control group for effective

comparison of the result.

3) A study can be conducted by including additional socio-demographic variables.

4) Flipped classroom teaching may be developed in areas of awareness regarding Deep Vein Thrombosis and its prevention.

CONCLUSION

Flipped classroom teaching method is proved to be effective on knowledge regarding Wells score for Deep vein thrombosis (DVT).

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