Results

Presentation And Analysis Of Data

Findings of this study will be presented in 4 different sections:

Section (I): deals with description of sociodemographic variables of the studied sample . (Table 1).

Section (II): deals with findings related to assessing nurse's knowledge and practices related to prevention of ventilator associated pneumonia and related to hypothesis (H_1,H_2,H_3) regarding to nurses (tables2,3,4,5) (figures 1,2,3).

Section (III): presents relationships between education, job, marital status, previous training, knowledge and skills of nurses (tables 6, 7).

Section (IV): deals with findings related to evaluating the impact of designed training program on patient's outcome and it showed description of the patients on sociodemographic variables and medical data (tables 8,9)

Table (1): Distribution of the studied nurses according to age, sex, education, Job, experience, marital status and previous training.

Frequency / Sociodemographic data	No n = 30	Percentage % 100.0
Age groups :-		
19 –22 years	24	90 %
23 – 26 years	3	10 %
27 – 30 years	3	10 %
$\bar{X}$ = 21.7 ± 2.6 SD		
Education :-		
Secondary school.	16	53.3%
Technical school.	8	26.6%
Bachelor school.	6	20%
Job :-		
Nurse (Diploma and Technical Nurse).	24	80 %
High nurse (Newly Graduated Baccalaureate Nurse).	6	20 %
Experience :-		
No	6	20 %
one year	12	40 %
2 years	9	30 %
10 years	1	3.3 %
13 years	2	6.6 %
$\bar{X}$=2.2 $\pm$ 3.4 SD		
Marital status :-		
Single	22	73.3 %
Married	8	26.6 %
Previous training		
Yes	3	10 %
No	27	90 %

- It is clear from table (1) that the majority of nurses are of less than 23-years old, more than half with secondary school education, single (73.3%), not receiving any previous training (90 %) and all of them are Females.

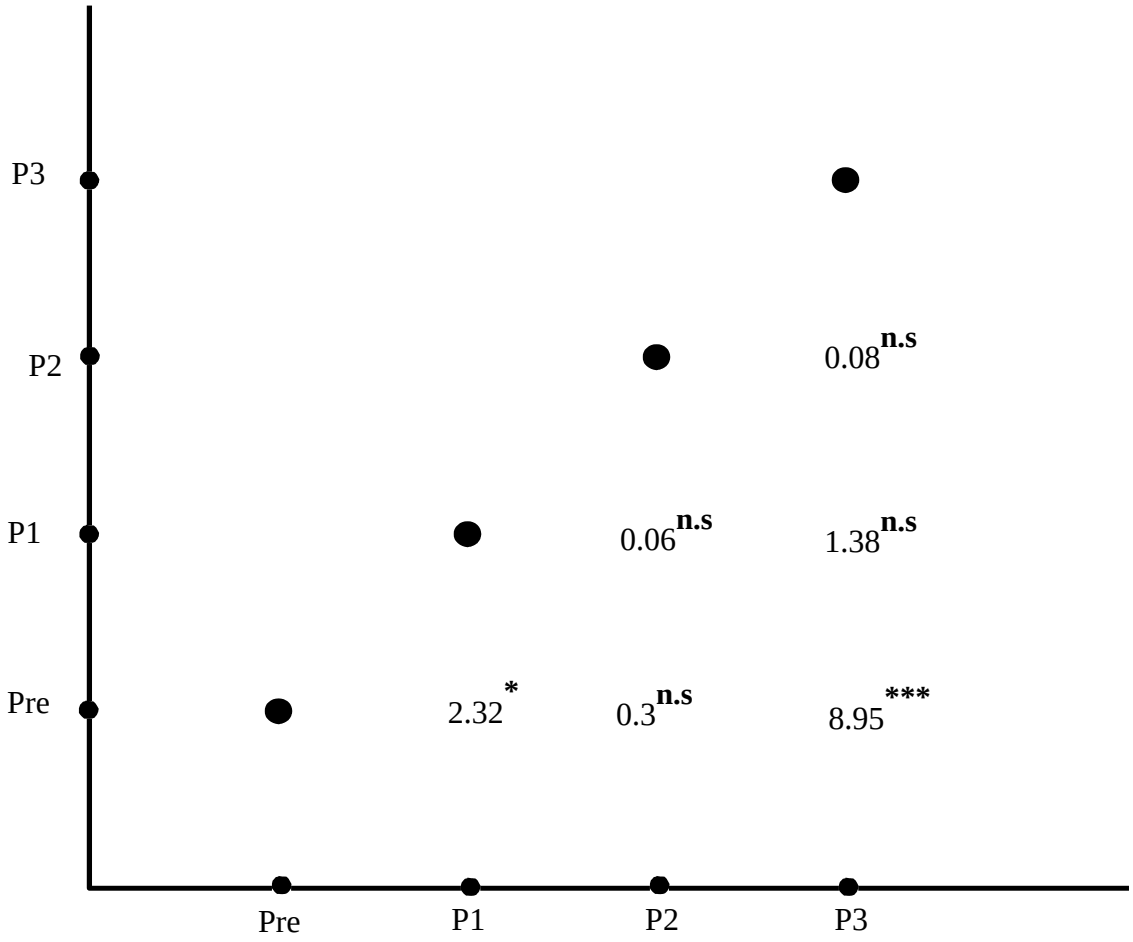

Figure (1): two by two t-test for nurse's knowledge scores all through the four assessments

* = indicate statistical significance at the 0.05.

*** = indicate statistical significance at the 0.001.

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Pre = pre-program P2 = after one month

P1 =immediately post. P3 = after two months

The above figure documented that, there is no significant statistical differences between the mean knowledge scores of nurses all through the four assessments except the pre-program and immediately post, pre-program and the after two months indicated a significant statistical Differences with P-values of < 0.05.

Hypothesis (1) stated that the post mean knowledge scores of nurses who will be exposed to the designed training program will be higher than the pre-program mean scores and this table is related to this hypothesis.

Table (3): Total respondents knowledge scores levels in percentages all through the four assessments

Knowledge levels / Items	Knowledge level					
	< 60 %		60 – 80 %		80 – 100 %	
	Unsatisfactory n = 30		Satisfactory n = 30		Good n = 30	
	No	%	No	%	No	%
Pre-program	10	33.3 %	20	66.6 %	0	0 %
immediately post after	0	0 %	5	16.6 %	25	83.3 %
one month	0	0%	14	46.6 %	16	53.3 %
After two months	0	0 %	26	86.6 %	4	13.3 %
$x^2 = 79.5$ P < 0.001						

Table (3): Documented that the majority of nurses (66.6) had a satisfactory knowledge level pre-program implementation. However, immediately post program implementation majority of nurses (83.3 %) got a good knowledge level . Also, after one month more than half of them having a good knowledge level. After two months the majority of nurses (86.6 %) having a satisfactory knowledge.

- A significant statistical differences were found at p-values of < 0.001 between pre-programes after one , two and three months after program implementation .
- Thus hypothesis (1) was supported.

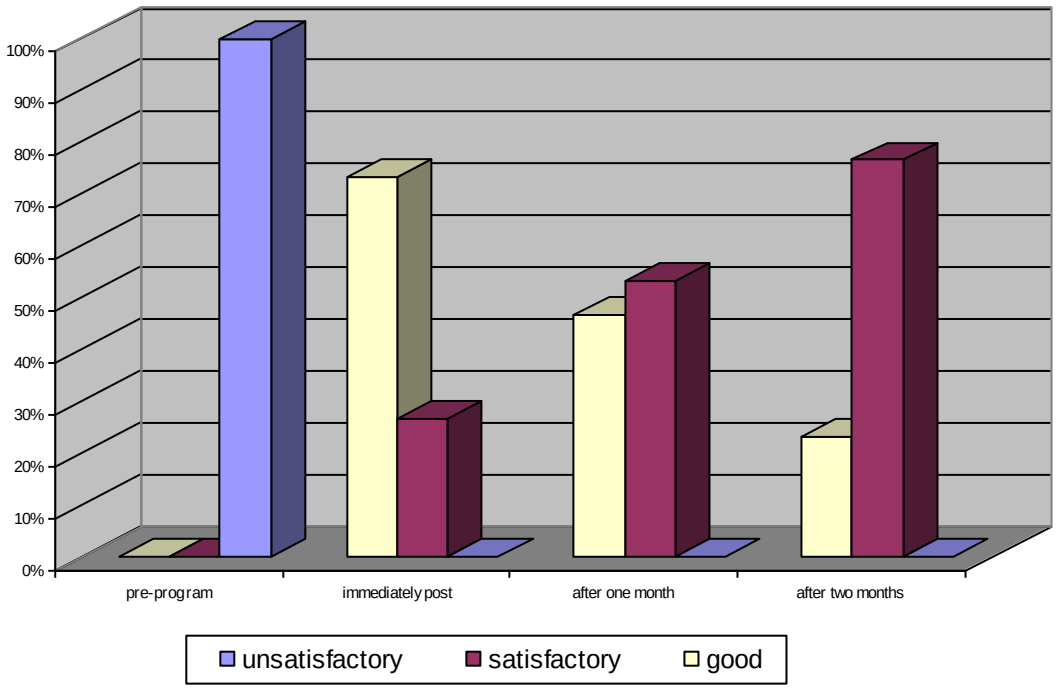

Figure (2) percentage distribution of the study group according to practice score and degree of satisfaction.

Figure (9): illustrated that all nurses (100 %) were having a satisfactory practice level pre-program implementation. However, immediately post program implementation, the majority of nurses (73.3 %) having a good practice level. After one month, and more than half of them (53.3 %) were having a satisfactory practice level. Also, after two months the majority of them (76.6 %) got a good practice level. With significant statistical differences at p-values < 0.001 between the four assessments.

Hypothesis (3) stated that there will be a positive correlation between nurse's knowledge and practices scores and this table is related to this hypothesis.

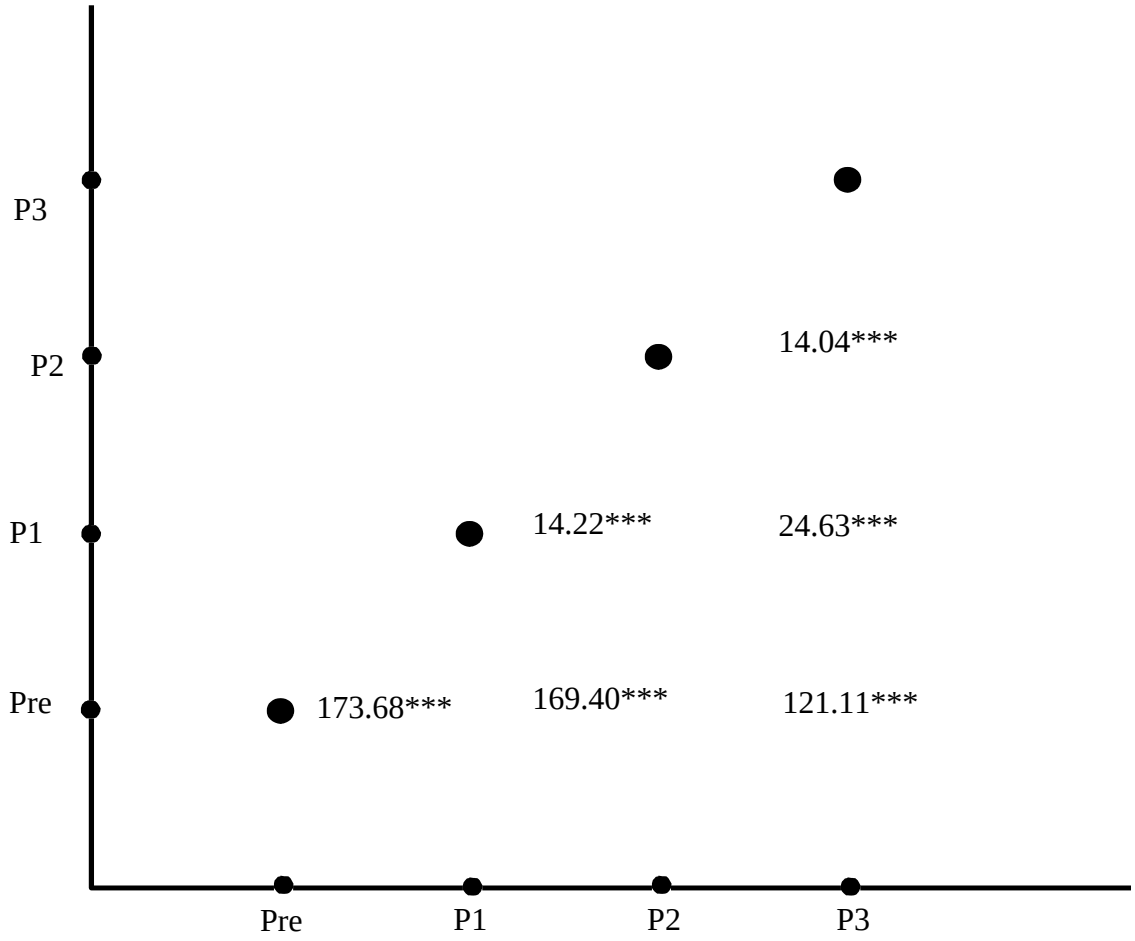

Figure (3): Two by two t-test for nurses mean practice scores all through the four assessments.

*** = indicate statistical significance at the 0.001.

Pre = pre-program P2 = after one month

P1 =immediately post. P3 = after two months.

- The above figure documented, a significant statistical differences between the mean practice scores of nurses all through the four assessments with p-values <0.001.

Table (5): Correlation coefficient for nurse's knowledge, practice, age and years of experience.

r- / p-values Variables	r	p-values
Age with total knowledge scores		
Pre-program	0.22858	n.s
Immediately post	0.28379	n.s
After one month	0.15455	n.s
After two months	0.06770	n.s
Age with total practice scores		
Pre-program	- 0.18903	n.s
Immediately post	- 0.20783	n.s
After one month	- 0.20826	n.s
After two months	- 0.05642	n.s
Years of experience with knowledge		
Pre-program	0.28190	n.s
Immediately post	0.308472	n.s
After one month	0.149154	n.s
After two months	- 0.040031	n.s
Years of experience with practice		
Pre-program	- 0.28557	n.s
Immediately post	- 0.27802	n.s
After one month	- 0.35901	n.s
After two months	- 0.24544	n.s
Correlation between total (k &p)	0.155594	n.s
Correlation between total (immediate k &p)	- 0.1335157	n.s
Correlation between total (after 1month k &p)	0.1412925	n.s
Correlation between total (after 2month k &p)	0.272764	n.s

N.S = no statistical significance.

- It is clearly shown from this table that age is negatively correlated with knowledge and practice scores of nurses pre-program, immediately post program, after one and two months of program implementation. Also, years of experience are negatively correlated with knowledge and practice scores of nurses pre-program, immediately post, after one and two months of program implementation.

Thus hypothesis (3) was not supported partially.

Table (8): Distribution of the studied patients according to age, sex, residence, diagnosis, smoking and recent surgery.

Sociodemographic and Medical Data / Frequency	Control (1) n= 50		studied (2) n= 50	
	No	Percentage	No	Percentage
***Aging group** 35-45 years 45 and more M_1=54.8±11.03 M_2 = 55.3±10.14	 10 40	 20 % 80 %	 14 36	 28 % 72 %
***Sex** Male Female	 30 20	 60 % 40 %	 22 28	 44 % 56 %
***Residence** Kaliobia	50	100 %	50	100 %
***Diagnosis**				
- Diabetes mellitus.	16	32 %	9	18 %
- Myocardial infarction.	8	16 %	6	12 %
- Chronic obstructive pulmonary disease.	7	14 %	1	2%
- Cerebral infarction.	9	18 %	14	28 %
- Cerebral strock.	6	12	8	16%
- Cerebral haemorrhage.	3	6	9	18%
- Post partum haemorrhage.	1	2		
- Hepatic comma.			3	6%
***smoking** Yes No (male) No (female)	 24 6 20	 48 % 12 % 40 %	 17 5 28	 34 % 10 % 56 %
***Recent surgery** Yes No	 0 50	 0 % 100 %	 0 50	 0 % 100 %
***Past antibiotic therapy** Yes No	 0 50	 0 % 100 %	 0 50	 0 % 100 %
Type of Isolated organism: - Staphylococcus aureus	19	38%	4	18%
- Klepsiella pneumonia	24	48%	6	27.5%
- Streptococcus pneumonia	4	8%	1	4.5%
- Pseudomonas aeruginosa	2	4%	11	50%

It is clear from table (8) that the majority of patients (80 %) are of more than 45 years old in control group and (72%) in study group, male in control (60%) but female in study group (56 %), all patients from Kaliobia, and the major frequent diagnosis in control is diabetes mellitus (32 %) but in study group is cerebral infarction (28 %). Also, the majority of males in both control (48 %) and study group (34 %) are smokers but all females in both control and study group are not smokers and all of them have no recent surgery, didn't take Past antibiotic therapy and the majority of patients with VAP (48%) had Klebsiella pneumonia organism in control group and (50%) of patients had Pseudomonas aeruginosa in study group.

-It is clear from table (9): that all the patients are unconscious, have (NGT), the majority of them (62%) take corticosteroids and (74%) of them take stress ulcer prophylaxis drugs in control while the minority of patients (34%) takes corticosteroids and (46%) of them takes stress ulcer prophylaxis drugs in study group. Also the majority of patients (88%) have fever in the 5^{th} day in control while the majority of them (88%) have no fever in the same day and (90%) in the first day in study group.

-All patients have no purulent sputum in the 1^{st} day in both control and study group and the majority of them have purulent sputum in the 3^{rd} day (56%), 4^{th} day (98%), 5^{th} day (98%) in control, while the majority of them have no purulent sputum in 3^{rd} day (92%), 4^{th} day (66%), 5^{th} day (56%) in

-All patients have no leucocytosis in the 1^{st} day and the majority of them (98%) have leucocytosis in the 5^{th} day in control and (54%) study group.

-All patients have negative endotracheal aspirated sputum culture in the 1^{st} day in both control and study groups and the majority of them (98%) have positive endotracheal aspirated sputum culture in the 5^{th} day in control, while the majority of them (56 %) have negative endotracheal aspirated sputum culture in the 3^{rd} and 5^{th} day in study group. Thus hypothesis (4) was supported.

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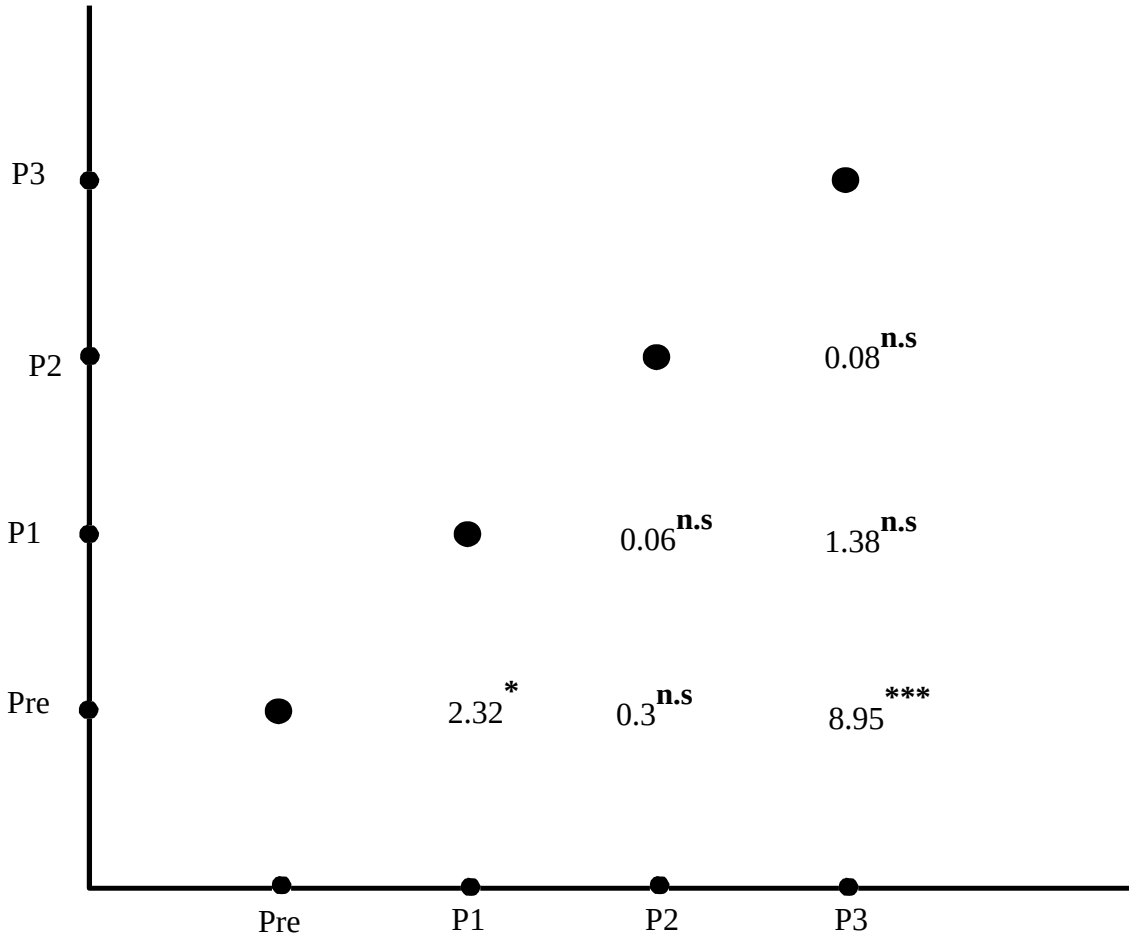

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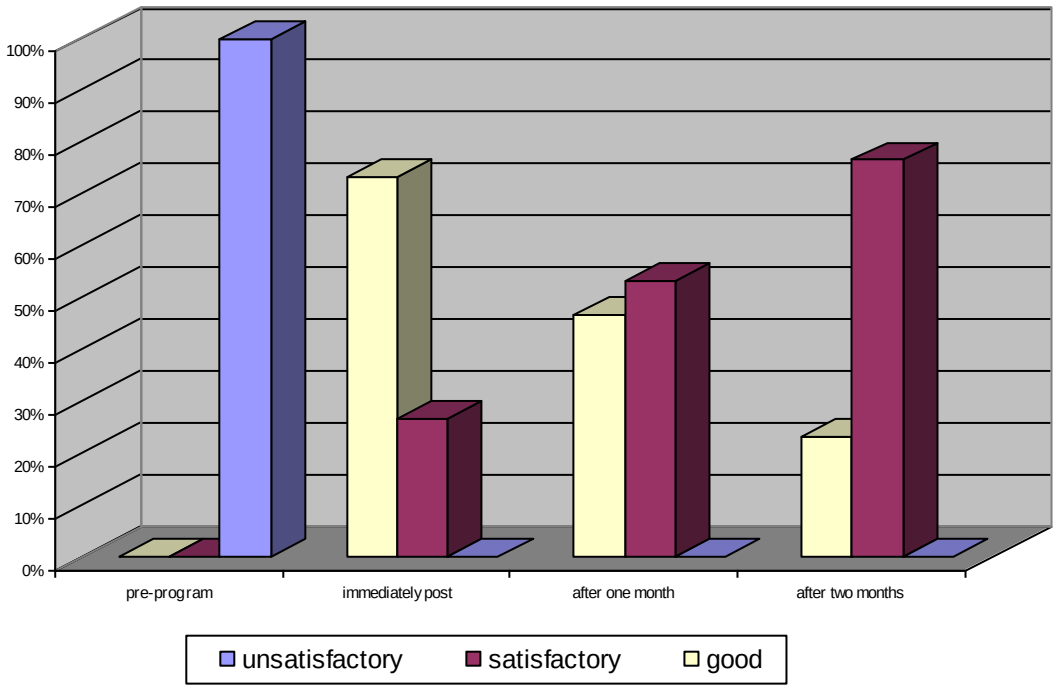

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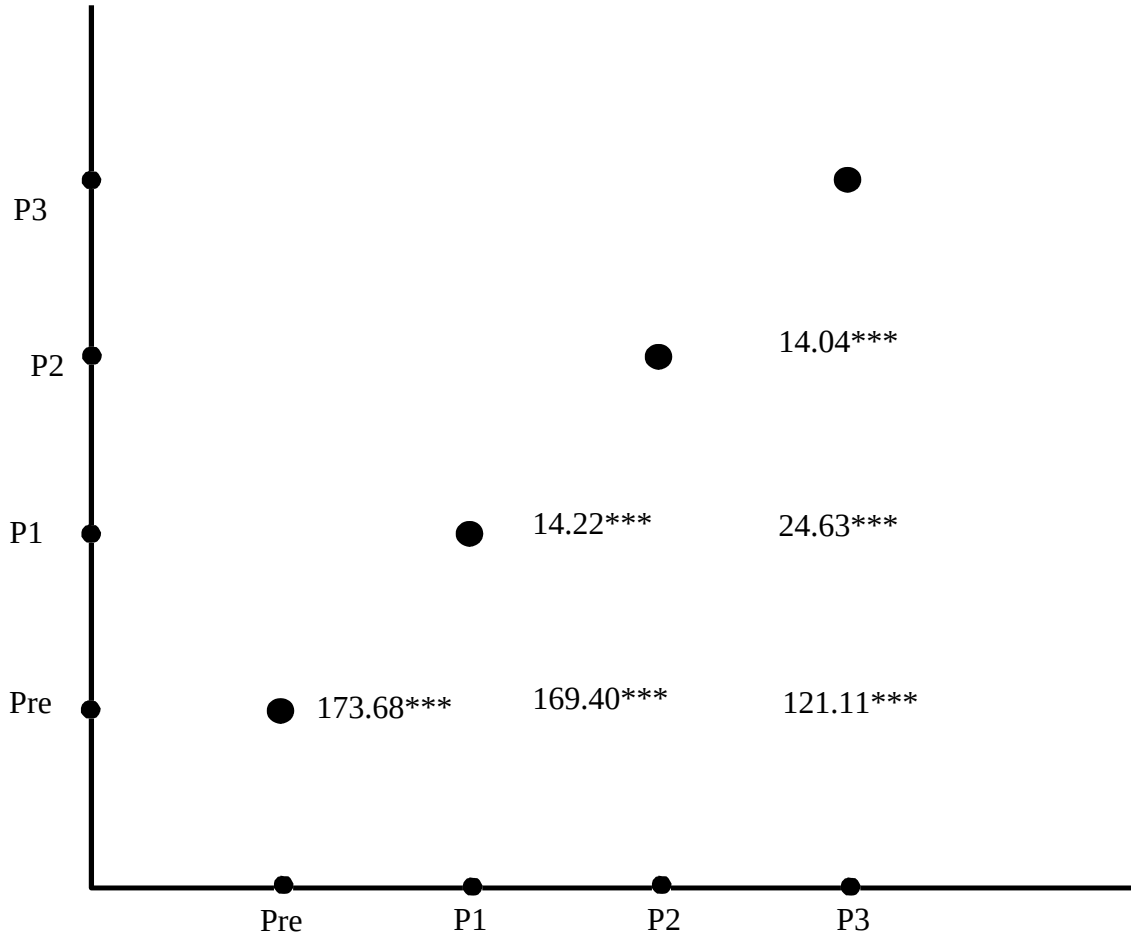

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