A COMPARATIVE STUDY ON ELECTRONIC VS. PAPER PARTOGRAPH FOR BETTER OUTCOME IN TERM OF KNOWLEDGE AND PRACTICE AMONG MIDWIVES AT THE SELECTED HOSPITAL, MEERUT

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Abstract: This study has been undertaken to investigate the significant difference in the knowledge and practice of Midwives regarding Paper and Electronic Partograph in the selected Hospitals of Meerut. The objectives of the study are To assess the level of knowledge and practice on Electronic vs. Paper Partograph among Midwives. **2.** To compare the level of knowledge and practice on Electronic vs. Paper Partograph among Midwives. **3.** To find out the association between the level of knowledge and practice on Electronic vs. Paper Partograph with selected demographic variables. A comparative study was conducted on 60 Midwives, 30 in one group and 30 in another group, selected by Purposive Sampling Technique. Demographic variables, self structured knowledge questionnaire and practice checklist was used to collect data by applying Comparative Descriptive Research Design. The result shows that Midwives have adequate knowledge and practice regarding Paper Partograph as compare to Electronic Partograph by using Unpaired „t"-test (t=8.99 and p= <0.00001) for knowledge score and (t= 42.5 and p= <0.00001) for practice score. There was significant association with selected demographic variables such as Residence, Educational status, and Work place in knowledge and Residence in practice of Paper Partograph as compare to Electronic Partograph.

Key words: level of Knowledge, Practice, Paper Partograph, Electronic Partograph, Midwives

INTRODUCTION

 "Partograph is a visual representation of events, through which motherly or fetal health is assessed in a single paper."
Constant and punctual monitoring of mother and fetal parameters in the course of labor is delicately major to check out mother and fetal well-being, assisting normal labor, associating difficulties, and prodding logical judgment to address them promptly. Primarily liable the Friedman's wind, the Partograph was layout by Friedman in 1954. It was more upgraded by Philpott and Castle who proposed the alert and action lines to ease intervention for the time of childbirth. There are also several categories of Partograph that have evolved in varied territories to meet the requirements.

"Use of the electronic Partograph, a digital labor-support operation, is associated with bettered fetal issues and minor use of interventions to support normal labor compared to the normal Partograph".

The E-Partograph is aimed to enhance data record effectiveness by an electronic recording of data and depositing the entire patient lines inside the device. Finally, the E-Partograph goals to further attestation and usage of intrapartum detail to notify labor operation judgments. It as well as permits each SBA in an installation to have a quick approach to knowledge regarding everything in active labor, which agreement durability of provision of care. The E-Partograph strengthens SBA clinical practice

through assisting applicable observing and also carefulness at the time of childbirth. Many portable devices are undergoing elaboration with the participation perception of enhancing care at the time of birthing.

Carol Bedwell, Dame Tina Lavender, and Karen Levin (2017) concluded in a realist review that the Paper Partograph seems to be admitted, confirmation suggests that it isn't applied in practice as expected and therefore isn't reaching its eventuality in perfecting issues. Several inventors have concentrated on low-cost digital operations to address crunches in the paper Partograph, meliorate recordkeeping, support decision timber, and enrich the quality of care during labor and delivery. In one of the first published evaluations of digital labor-support operations.

Asma Ramadan Khamis, Chistina Maly, Cyndi Hiner, Jeremie Zoungrana, Khadija Mohamed, Lindsay Elizabeth Litwin et. al., Reported on the use of an Android tablet-electronic Partograph operation (E-Partograph) in Zanzibar. Health workers swiftly came competent and confident in using thee-Partograph operation on a tablet and believed its use bettered promptness of care and supported decision timber. This study seeks to define the effectiveness of E-Partograph use on health issues in limited-resource settings and to ascertain the adequacy and take on.

Various studies as well as a review show that Partograph is more efficient and it is easy to use and specialized training and trainer required for operating and learning both paper and Electronic Partograph. It is also required in the field of nursing because as we know that now a day's everything become modernized, so to bring changes and new trends that increase the standards of nursing and perfection in the provision of care. So the current study is used to evaluate and compare the knowledge and skills of birth attendants regarding Partograph and this study will assist to increase the knowledge and improve skills.

REVIEW OF LITERATURE

Review of literature related to these areas.

1. Review of literature related to knowledge and practice on Paper Partograph

2. Review of literature related to Electronic Partograph

3. Review of literature related to comparison of electronic Partograph vs. Paper Partograph

1. **Review of literature related to knowledge and practice on Paper Partograph.**

    Luke Chiwala (2022) has done cross-sectional and mixed-method research to judge care providers' Knowledge or Utilization of Partograph to Diagnose Fetal Distress during Labour. The study was conducted at the Bwaila Hospital in Lilongwe District and the sample size was 20 Midwives at the Bwaila labor ward. Data were collected by administering an in-depth interview method. The result of the study showed that Midwives had good knowledge regarding Partograph and the use of Partograph and diagnosis of fetal distress was poor.

Karma Choden and Nidup Dorji (2021) carried out a descriptive study to estimate knowledge or Practice on the utilization of Partograph in Nurse- Midwives working in health centers of Bhutan. The result shows that Midwives have good knowledge of Partograph, attitudes regarding the usage of Partograph identify as favorable and there is a need to improve the practice of the Partograph.

Ebong R.I., Nsemo A.D., and Ojong I.N.(January 2021) conducted a cross-sectional descriptive survey study to identify the Knowledge and Utilization of Partograph at the time of childbirth in Nurses and Midwives working at the University of Calabar Teaching Hospital Calabar. The result indicates that Midwives knew Partograph.

2. **Review of literature related to knowledge and practice of Electronic Partograph**

Ansu Narwal and Priyanka Singh (2021) performed a mixed-method cross-sectional observational research to identify, the usability or acceptability of electronic Partograph study was conducted in the labor room in the North-eastern states of India Meghalaya &Arunachal Pradesh. The details from the samples were collected by using the questionnaire. The result revealed that the administration of Electronic Partograph can change maternal and child health care delivery in low resources settings. This study also showed that tablet Electronic Partograph is simple to utilize or admitted by the Staff nurses and medical personnel.

Andi Nilawati Usman, Andi Wardihan Sinrang, and Siti Maria Ulfa (2020) conducted cross-sectional research to know the utilization of digital Partograph as a learning media for normal childbirth care involving 50 Midwifery students as a sample. The result revealed that the pre-test median was 71.09 and Partograph filling competency was 85.95 with a very good category. p-value significant or it means digital Partograph was very impressive for evolving the Partographic filling competency.

Ferdousi Begum, Md Jahid Hasan, and Md Sahariar Hossain Tanvir (2020) performed cross-sectional research to know the Advantages of the "Life Curve" Mobile Application: An Easier Alternate of Paper Partograph. The objective was to describe the benefits of the "Life Curve" mobile application and to identify the early warning, early consultation, and intervention among women admitted with labor pain. Ethical clearance was taken from the Bangladesh Medical Research Council. The result revealed that the app was easy to use, automatically plot the graphs, liking to work on time to remind examining the mothers by an alarm.

3.   Review of literature related to comparison of Electronic Partograph vs. Paper Partograph

Aminur Rahman, Dewan Md. Emdadul Hoque, Fatema Ashraf, Monjur Rahman, Jelle Stekelenburg, and Parveen Fatima et. al., (2019) performed a comparative, follow-up crossover study to identify the feasibility and effectiveness between Paper Partograph and Electronic Partograph. The outcome of the study indicates that paper Partograph utilization was corrected and with the E-Partograph there was a reduction in the rate of prolonged labor.

Burhanuddin Bahar, Devianti Tandiallo, Mardiana Ahmad, Nasrudin A. Mappaware, and Prihantono (2019) conducted a quasi-experimental study to identify the Web-Based Partograph on Early identification of Emergency Cases and Referral Processes among 30 women who were in labor. The study aimed to make difference between the word electric browser (WEB)-based Partogram and the conventional Partogram. The outcome indicates the web-based Partogram fastens in monitoring contraction, oxytocin, or procedure of giving birth as compared to conventional Partograph.

MATERIALS AND METHOD

RESEARCH APPROACH

Quantative (descriptive) research approach

RESEARCH DESIGN

Comparative descriptive research design

SAMPLE AND SAMPLING TECHNIQUE

60 Midwives and Staff nurses who are posted in the Labor room, Antenatal Care Unit, Post-Natal Care Unit, Gynae Operation Theatre, and Gynae Ward settings in a selected Hospital, District Women Hospital and Chhatrapati Shivaji Subharti Hospital of Meerut District. Selected by Purposive sampling technique

DATA COLLECTION

This study includes a self-structured knowledge questionnaire and a self-structured practice checklist to evaluate the knowledge and practice of Midwives on Paper Partograph vs. Electronic Partograph. Demographic characteristics, it contains the demographic profile of the subjects such as Age, Residence, Religion, Marital status, Educational status, Workplace, Year of experience, and In-service training program on Partograph. It was developed by the investigator to collect the sample characteristics.

The knowledge questionnaire consists of 12 questions in both questionnaires (Knowledge questionnaire for Paper Partograph and Knowledge questionnaire for Electronic Partograph).

Practice Checklist consists of eighteen items in both checklist (Practice Checklist on Paper Partograph and Practice Checklist on Electronic Partograph).

CONTENT VALIDITY OF THE TOOL

The tools along with the request letter, statement of the problem, objectives, Self-structured questionnaire and checklist, and demographic variables were submitted to six experts from the different fields of the obstetric and gynaecological department for validation.

RELIABILITY OF THE TOOLS

The reliability for knowledge questionnaire for Paper Partograph is r = 0.94 and for Electronic Partograph r = 0.97 i.e. highly positive correlation.

The reliability for the practice checklist for Paper Partograph is r = 0.96 i.e. highly positive correlation and for Electronic Partograph r = 0.72 i.e. moderate positive correlation

DATA ANALYSIS

The score was planned to be organized tabulated and analyzed by using the frequency distribution with Descriptive Statistics (Mean, Standard deviation, and Mean score percentage) and Inferential Statistics (Unpaired t-test and Chi-square) which helped to get the significant difference between the knowledge and practice on Paper vs. Electronic Partograph among Midwives.

RESULT AND DISCUSSION

Data was collected from the two groups from different settings. One group was for Paper Partograph and another group for Electronic Partograph.

Table-1: Frequency and percentage distribution of socio- demographic variables of Midwives regarding knowledge and practice on Paper Partograph vs. Electronic Partograph. n= 60

CATEGORY	SOCIO DEMOGRAPHIC VARIABLES	PAPER PARTOGRAPH		ELECTRONIC PARTOGRAPH	
		FREQUENCY	%	FREQUENCY	%
1.AGE	20- 30	15	50	18	60
	31-40	9	30	9	30
	41- 50	5	16.6	3	10
	51- 60	1	3.33	0	0
1.RESIDENCE	URBAN	17	56.6	18	60
	RURAL	13	43.3	12	40
2.RELIGION	HINDU	20	66.6	20	66.6
	MUSLIM	3	10	5	16.6
	CHRISTIAN	3	10	3	10
	SIKH	4	13.3	2	6.6
	OTHERS	0	0	0	0
3.MARITAL STATUS	MARRIED	18	60	18	60
	UNMARRIED	10	33.3	12	40
	DIVORCED	0	0	0	0
	WIDOWED	2	6.6	0	0

4.Educational status	Diploma (GNM)	13	43.3	18	60
	Post basic B.Sc. nursing	4	13.3	5	16.6
	Degree (B.Sc. nursing)	13	43.3	7	23.3
	M.Sc. in Obstetrics	0	0	0	0
	Other specialized courses	0	0	0	0
5.Work place	Labour room	10	33.3	8	26.6
	Ante-natal ward	7	23.3	3	10
	Post-natal ward	5	16.6	8	26.6
	Gynae O.T.	3	10	4	13.3
	Gynae ward	5	13.3	7	23.3
6.Year of experience	<5 years	15	50	17	56.6
	5-10 years	10	33.3	12	40
	11-15 years	2	6.6	1	3.3
	16 and above	3	10	0	0
7.Any in-service training on Partograph received	Yes	16	53.3	8	26.6
	No	14	46.6	16	53.3

The midwives who used Paper Partograph, Majority related to Age Group of 20-30 years of Age, Residence Urban area, Hindu religion, Marital Status Married, Educational Status Diploma, Work Place Labor Room, having <5 Year of Experience, and majority received In-Service training on Partograph.

The Midwives who used Electronic Partograph, Majority related to related to Age Group of 20-30 years of Age, Residence Urban area, Hindu religion, Marital Status Married, Educational Status Diploma, Work Place Labor Room and Post natal Care Unit, having <5 Year of Experience, and majority not received In-Service training on Partograph.
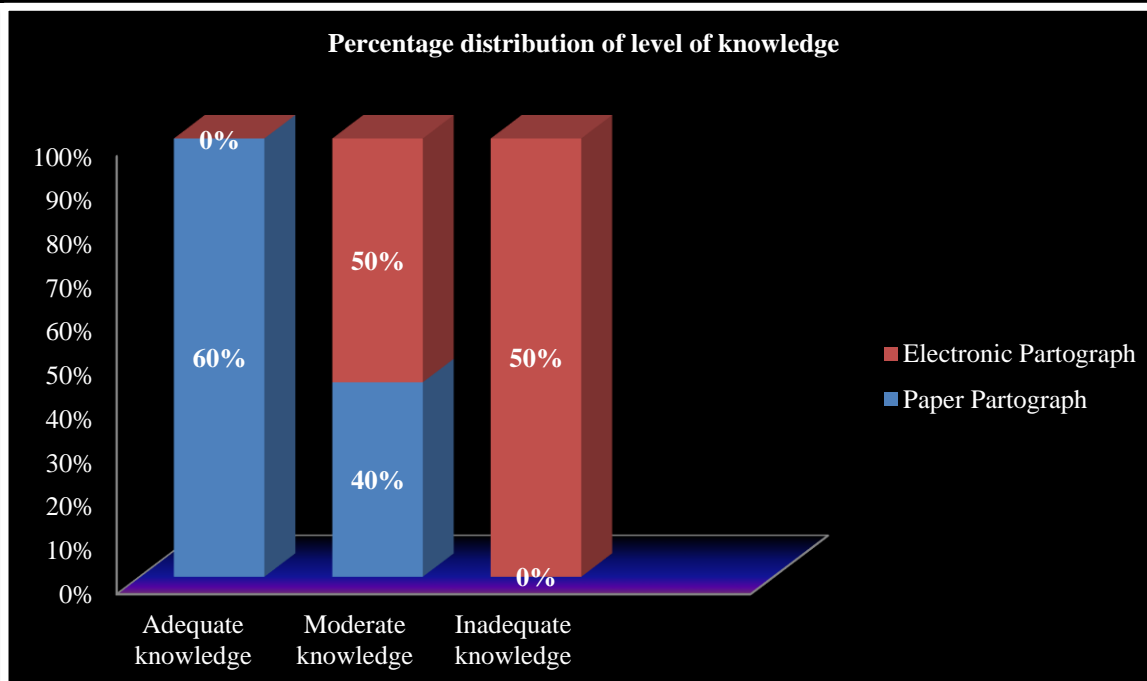
Figure 1- shows the percentage distribution of level of knowledge of Staff nurses regarding Paper Partograph vs. Electronic Partograph. n=60

It indicates that Staff nurses have adequate knowledge regarding Paper Partograph as revealed by the percentage score. So the present study reveals that Staff nurses know Paper Partograph as compared to Electronic Partograph
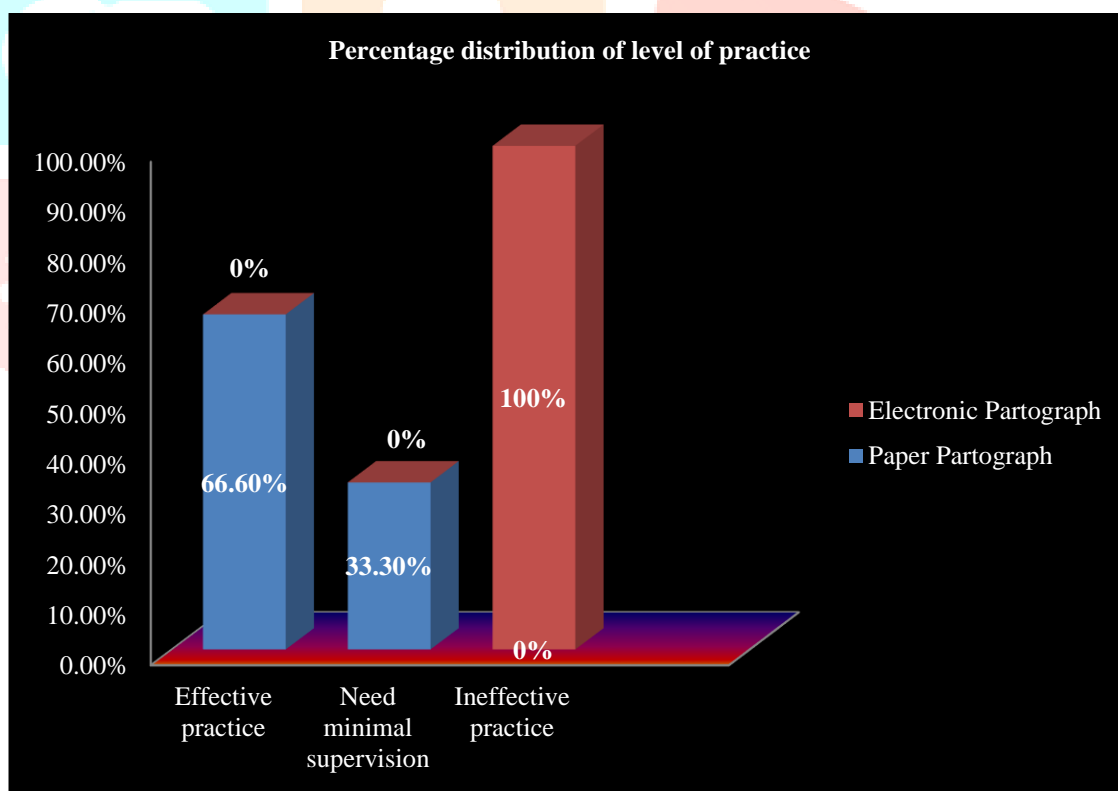

Figure 2- shows the percentage distribution of level of practice of Staff nurses regarding Paper Partograph vs. Electronic Partograph. n= 60

It indicates that Staff nurses have effective practice regarding Paper Partograph as revealed by the percentage score. So the present study reveals that Staff nurses have effective practice regarding Paper Partograph as compared to Electronic Partograph.
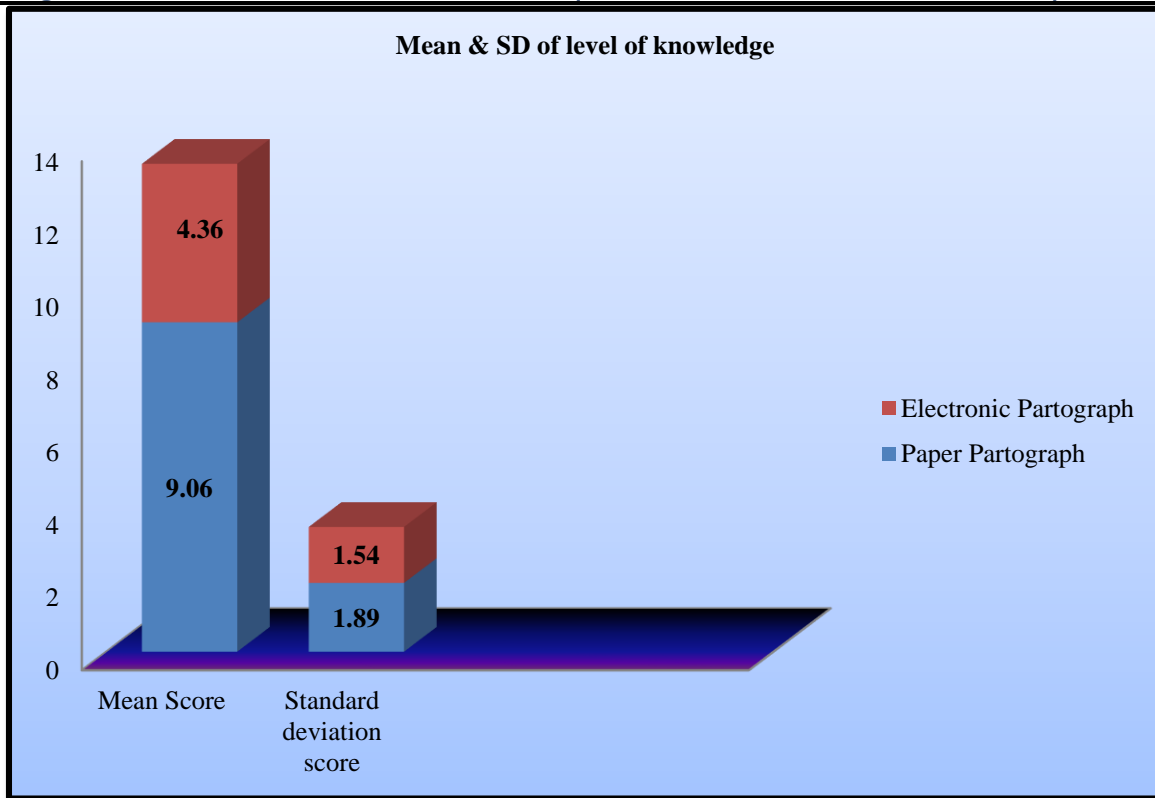
Figure 3- shows the Mean and Standard deviation of level of knowledge regarding Paper Partograph vs. Electronic Partograph. n=60

The Standard deviation score regarding the level of knowledge is 1.89 and in the knowledge of Electronic Partograph standard deviation is 1.54.

The calculated "t"- value is 8.99 is greater than the table value which is significant (0.05 level of significance).

Staff nurses have a significant adequate knowledge score as compared to the knowledge of Electronic Partograph.
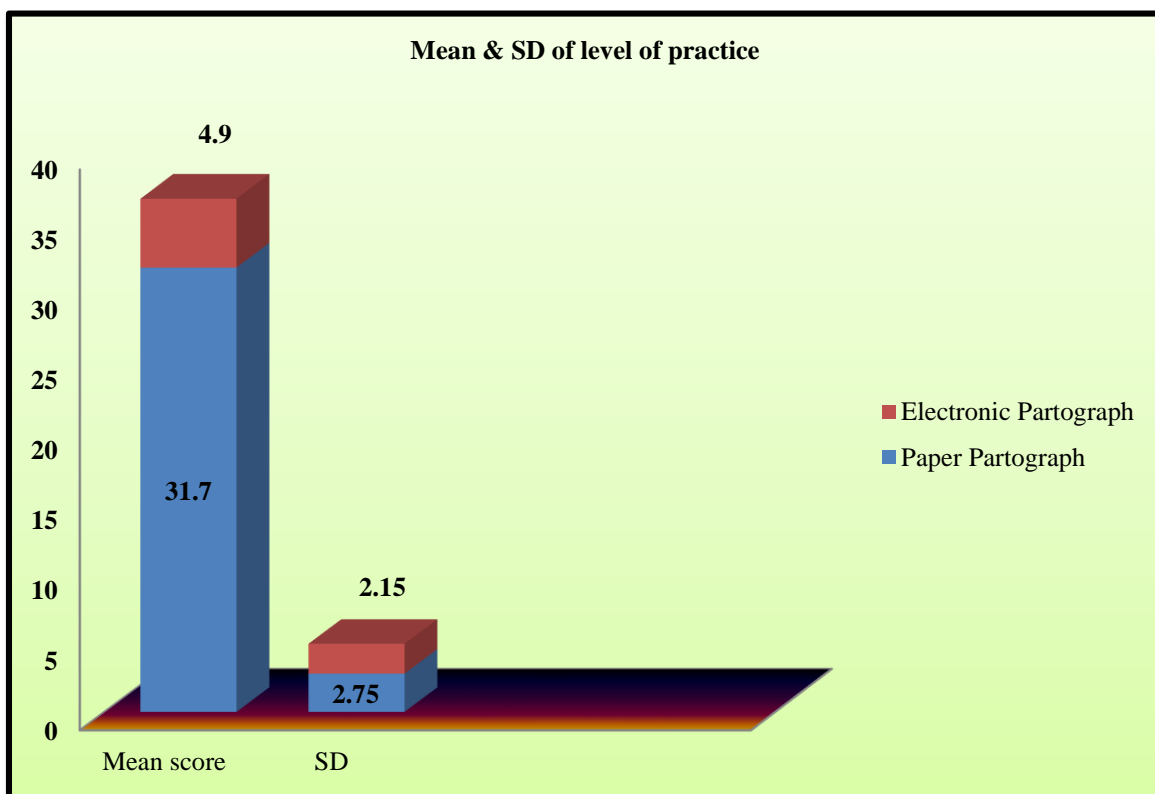

Figure 4- shows the Mean and Standard deviation of level of practice regarding Paper Partograph vs. Electronic Partograph. n=60

The Standard deviation score regarding the level of practice is 2.75 and in the knowledge of Electronic Partograph standard deviation is 2.15.

The calculated "t"- value is 42.5 is greater than the table value which is significant (0.05 level of significance).

Staff nurses have a significant adequate knowledge score as compared to the knowledge of Electronic Partograph.

Table-2: Chi square value show the association between the level of knowledge score on Paper Partograph with selected demographic variables. **n=60**

S.No	Demographic variables	Category	Adequate knowledge	Mod. Knowledge	df	Tab. value	Calc. value	P value	Sig/ Non Sig
1.	Age	20- 30	9	6	3	7.82	2.40	0.49	N.S
		31-40	4	5					
		41- 50	4	1					
		51-60	1	0					
2.	Residence	Urban	7	10	1	3.84	5.79	0.01	S.
		Rural	11	2					
3.	Religion	Hindu	11	7	3	7.82	0.23	0.97	N.S
		Muslim	2	1					
		Christian	3	2					
		Sikh	2	2					
4.	Marital status	Married	11	7	2	5.99	0.09	0.95	N.S
		Unmarried	6	4					
		Widow	1	1					
5.	Educational status	Diploma (GNM)	6	7	2	5.99	6.36	0.04	S.
		Post basic B.Sc.	1	3					
		B.Sc. nursing	11	2					
6.	Work place	Labour room	7	3	4	9.49	8.91	0.02	S.
		ANC	6	1					
		PNC	0	5					
		Gynae O.T.	1	2					

					df	Tab. value	Calc. Value	P value	Sig/ Non sig
		Gynae ward	4	1					
7.	Year of experience	<5 years	8	7	3	7.82	1.25	0.74	N.S
		5- 10 years	6	2					
		11- 15 years	2	2					
		16 and above	2	1					
8.	In-service training program on Partograph	Yes	10	6	1	3.84	0.08	0.76	N.S

At 0.05 level of significance. The table findings revealed that Residence, Educational Status, and Workplace found significant where as Age, Religion, Marital Status, and Year of Experience and in-service training on Partograph found not significant.

In this study, it is evident that there is a significant association between the level of knowledge score on Paper Partograph among the Midwives with selected demographic variables. (Age in years, Residence, Religion, Educational status, Work Place, Year of experience, and training on Partograph).

Table-2.1: Chi square value show the association between the level of practice score on Paper Partograph with selected demographic variables. n=60

S.No	Demographic variables	Category	Effective practice	Need minimal supervision	df	Tab. value	Calc. Value	P value	Sig/ Non sig
1.	Age	20- 30	12	3	3	7.82	6.6	0.08	N.S.
		31-40	3	6					
		41- 50	4	1					
		51-60	1	0					
2.	Residence	Urban	9	8	1	3.84	5.4	0.02	S.
		Rural	11	2					
3.	Religion	Hindu	12	7	3	7.82	2.23	0.52	N.S.
		Muslim	3	1					
		Christian	3	0					
		Sikh	2	2					
4.	Marital status	Married	10	8	2	5.99	3.7	0.15	N.S.
		Unmarried	9	1					

		Widow	1	1				
5.	Educational status	Diploma	9	4	2	5.99	1.70	0.42	N.S.
		P. B.Sc.	3	1				
		Degree	11	2				
6.	Work place	Labour room	9	1	4	9.49	8.91	0.06	N.S.
		ANC	6	1				
		PNC	0	5				
		Gynae O.T.	2	1				
		Gynae ward	3	2				
7.	Year of experience	<5 years	10	5	3	7.82	1.2	0.75	N.S.
		5-10 years	6	4				
		11-15 years	2	0				
		16 & above	2	1				
8.	In-service training	Yes	12	4	1	3.84	1.07	0.30	N.S.
		NO	8	6				

At 0.05 level of significance. The table findings revealed that Residence found significant where as Age, Religion, Marital Status, Educational Status, Work place, Year of Experience, and in-service training on Partograph found not significant

In this study, it is evident that there is a significant association between the level of Practice score on Paper Partograph among the Midwives with selected demographic variables. (Age in years, Residence, Religion, Educational status, Work Place, Year of experience, and training on Partograph).

There was significant association with selected demographic variables as compare to Electronic Partograph.

 CONCLUSION

The result and the findings of this study show that level of knowledge and practice regarding Paper Partograph among Midwives was high as compare to the level of knowledge and practice regarding Electronic Partograph among Midwives in selected Hospitals of Meerut.

FUTURE SCOPE

- This research assists the Nurses in knowing the different levels of knowledge and practice on Paper vs. Electronic Partograph among Midwives in a selected Hospital in the Meerut district and thereby help to various changes and causes in the level of knowledge and practice.

- Research is a mighty backbone for evidence-based nursing. Hereupon Staff or scholars should be motivated to do research. Research offers proficiency or training between Staff nurses on Partograph.

- In India, the studies regarding knowledge and practice of Electronic Partograph are very less. Such a study should be done to reform the quality supervision or stabilized the standards of nursing.

- So the result of this study can be utilized or motivated to conduct further research in the future to renovate the knowledge and skills of Midwives on Partograph.

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