

Effect of Supportive Measures Training Program on Nurses' Practices during Labour

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Abstract

Aim of the study: to investigate the effect of supportive measures training program on nurses' practices during labor. **Setting:** At obstetric wards and intrapartum unit at Nasser Institute Hospital. **Study Design:** A quasi- experimental (an interventional pre and posttest study). **Sample:** All nurses provide guided direct care, there were 40 nurses included in the study. **Tools:** Three tools were used to collect data named self-administered questionnaire sheet, labor supportive measures' observational checklists, and nurses' satisfaction sheet. **Results:** The result of the present study findings was highly significant improvement in total knowledge and total practical skills among the studied sample pre intervention compared to immediate post and follow up 4 weeks post intervention. $P = < 0.01$. Additionally 95% among studied sample satisfied with the advanced knowledge included in training program. **Conclusion:** the supportive measures training program had an efficient improving nurses' knowledge and practices post intervention. Also majority among the studied sample were satisfied with the implemented training program. **Recommendations:** Implementation of labor supportive measure training program on different childbirth units to improve nurses' practice. Further research is required to investigate parturient woman's satisfaction with childbirth process after implementing labor supportive measures and effect of labor supportive measures on childbirth process out-come.

Keywords: Labor, Supportive Measures, Training Program, Nurses' Practices and Satisfaction.

Introduction:

The new Sustainable Development Goals (SDGs) to 2030 aim to reduce maternal mortality and provide equitable access to maternal healthcare. Compromised access to maternal health facilities in low-income countries, and specifically in Africa, contribute to the increased prevalence of maternal mortality. Goal 3 of the new Sustainable Development Goals (SDGs) to 2030 aims to reduce global maternal mortality ratio to less than 70 per 100,000 live births (**SDGs to 2030, 2015**). Maternal mortality could be attributed to poor socio-economic conditions, low quality of care, **lack of well-trained healthcare professionals**, lack of proper infrastructure, and barriers to accessing medical facilities (**Kyei-**

Nimakoh et al., 2017).

Furthermore, The World Health Organization (**WHO, 2018**) globally, the proportion of births attended by a **skilled birth attendant** in less developed countries increased from about 50% in 1990 to 60% in 2006. To be specific, regions with the lowest proportions of skilled-birth-attended deliveries were eastern Africa (34%), western Africa (41%) and south-central Asia (47%). The majority of approximately 140 million births that occur globally every year are among women without risk factors for complications for themselves or their babies at the beginning and throughout labour. Also, approximately half of all stillbirths and a quarter of neonatal deaths result from complications during labour

and childbirth. The burden of maternal and perinatal deaths is disproportionately higher in low- and middle income countries compared to high-income countries (**Lawn, et al., 2016**).

Moreover, **improving the quality of care** around the time of birth, especially in LMICs, has been identified as the most impactful strategy for reducing stillbirths, **maternal and newborn deaths**, compared with antenatal or postpartum care strategies (**Bhutta et al., 2014**). While numerous studies and systematic reviews suggest the use of nonpharmacologic approaches to pain management either as a primary method, or as a complement to pharmacologic approaches. Complementary and alternative therapies for pain relief involve non pharmacologic measures that may be used either as a woman's total pain management program or to complement pharmacologic interventions (**Leifer & Keenan-Lindsay, 2020**).

Also, non-clinical intrapartum practices, such as provision of emotional support through labour companionship, effective communication and respectful care, which may be fairly inexpensive to implement, are not regarded as priorities in many settings. Similarly, birthing options that respect women's values and promote choice during the first and second stages of labour are not consistently provided (**Tunçalp et al., 2015**).

Yet the road map of labour provides a useful framework for educator nurse to explain the psychological and physiological processes of labour, and a variety of activities for comfort and labour progress for women and their partners to use. By focusing on the normal unaltered process, parents learn to separate the norm from the numerous interventions that alter the process, sometimes for the better, sometimes for the worse. The intention is to give them confidence that they can handle normal labour and to participate meaningfully in decision-making when interventions are suggested (**Simkin, 2013**).

Nurses play a multidisciplinary role as a direct care provider, health educator and counselor, as a researcher and as administrator.

Significance of the study:

Provision of support in labour is one of the evidence-based nursing practice standards known to reduce morbidity and mortality with better labour outcome (**Ith et al., 2013**). Moreover, Emotional, physical, and informational support is positively affected mother's mental and physical health around the time of childbirth (**Iliadou, 2012**).

Furthermore, there are many beneficial effects of supportive measures provided by the nurses during labour as decreased the cesarean section rates, shortened the length of labour, reduce the need for analgesics, alleviates fear, perceived pain in labour and incidence of postpartum depression. Also creates a positive attitude towards childbirth and turn the moments of pain into the most memorable moments of a woman's life which consequently lead to happier and comfortable labour experience and enhancing parturient woman's satisfaction (**Najafi et al., 2017**)

According to the study of **Elmashad et al., (2018)** who recommended design and implement the training program for nurses about supportive measures during labour to improve nurses' practices. So, the present study is based upon previously mention studies finding which aimed to enhance the nurses' practices of supportive measures during labour.

Aim of the study:

The aim of the study was to investigate the effect of supportive measures training program on nurses' practices during labour.

Research Hypothesis:

Application the supportive measures training program will enhance nurses' practices during labour.

Subjects and Methods:**Research design:**

A Quasi-experimental (an interventional pre and posttest study).

Setting: The study was conducted at obstetric departments at Nasser Institute Hospital.

Sample: All nurses (40 nurses) who were working at previously mentioned study setting.

Exclusion Criteria:

- Nursing director, assistant and supervisors will be excluded.

Tools of Data Collection:

Tool I: a self-administered questionnaire sheet which included two parts:

The first part: assessed nurse's general characteristics (age, level of education, qualification, years of experience, attendance of supportive measures training program during labour, and place of residence) involved seven questions.

The second part: assessed nurses' knowledge related to supportive measures provided to laboring women, which involved nine multiple choice questions.

The knowledge scoring system was **two score** for correct answer and **one score** for incorrect answer. The total knowledge correct score was ($\geq 60\%$) while, the total knowledge for the incorrect score was ($< 60\%$).

The second tool was an observational checklist: was adapted from **EI Mashad, et al; (2018)** to assess nurse's practices and skills toward Supportive Measures during Labor. It's included three parts. **The first part** which included 15 items concerned with physical care which comprised (9 items related to 1st stage of labour and 6 items related to 2nd, 3rd and 4th stage of labour). **The second part** which included 13 items about training and information provided to laboring women it involved (8 items related to 1st stage of labour and 5 items related to 2nd, 3rd and 4th stage of labour). **The third part** which included 11 items about emotional supports which

comprised of (7 items related to 1st stage of labour and 4 items related to 2nd, 3rd and 4th stage of labour).

❖ **Scoring system for an observational checklist** was **two score** for correct practice and **one score** for incorrect practice. The total correct practice was scored as $\geq 60\%$ while incorrect practice total scored as $< 60\%$.

The third tool was "Nurse Satisfaction tool" adopted from (Sayed, et al., 2015), and included two parts.

The first part: assessed nurses' satisfaction regarding implemented training program about supportive measures during labour, which involved nine statements. Upon which nurses respond as satisfied, dissatisfied and uncertainly satisfied.

The second part: assessed barriers that prevent nurses to comply with supportive measures during labour. Each nurse was responded (yes or no) upon each statement. This was utilized follow-up four weeks post intervention.

An educational program was designed by the researcher according to nurses' learning needs pre intervention based upon advanced related literature.

Content validity and reliability:

All tools of data collections were developed and sent to three specialized university Prof. according to their comments, modification were considered.

Ethical Consideration:

- An official approval was obtained from Maternal and Gynecological Nursing Department then Scientific Research Ethical Committee in Faculty of Nursing, Ain Shams University before starting the study.
- An official approval letter was sent to the director of Nasser Institute Hospital and approval was obtained to conduct the study.
- Approval consent was obtained from the research scientific committee in Nasser institute
- Oral consent was obtained from each participant in the study.

- The researcher was clarified objective and aim of the study to each participant included in the study.
- All tools of data collection didn't touch nurse's dignity, culture, traditional and religious & ethical issues and respect human rights. Also didn't include any immoral statement.
- Each nurse had right to withdraw from the study at any phase.
- All tools of data collection were kept after statistical analysis to promote confidentiality of the study.

Field work or Operational design:

The study was implemented through three phases included the preparatory, implemented and evaluation phase.

1. Phase one (preparatory Phase): The researcher had reviewed the current advanced national and international literature related to the study topic, then prepared tools for data collection and designed guideline. Finally, conducted a **pilot study** on 10% of the sample size (4 nurses) to evaluate by specialized university professors, clarity and applicability of the tools used, according to statistical analysis of a pilot study, no modification was considered. Thus pilot sample was included in the study.

2. Phase two (implementation phase):

Firstly, the researcher was interviewed three nurses /day according to sequence of their attendance in hospital registration book and explain the aim of the study to obtain their oral consent. Interview was conducted in a separate place to maintain confidentiality of the study (duration of each interview 20 min). Three nurses were given the sheets then the researcher was back after 2 hours to be received the sheets.

Secondly, nurses' practices were assessed using an observational checklist, while they are providing care for laboring women.

- Each day, four nurses' practices were assessed from 9 Am to 9 pm.
- After the completion interviewing all

nurses. The supportive measures training program was designed and implemented through (10) sessions 3 for theoretical part and 7 for practical training, duration of each session 20 minutes, number of participants (4) nurses.

• Phase three (evaluation Phase): This phase was utilized to evaluate the effect of implemented supportive measures training program on enhancing nurses' knowledge and practices during labour. All tools of data collection were used pre intervention then immediately and four weeks post- intervention but the nurses' satisfaction tool was used only four weeks post intervention.

Statistical Design:

The appropriate statistical methods and tests were used for analysis of results, presented in tables, figures and graphics as required.

Limitation of the study:

A Supportive instructional training program implementation was postponed from one to thirteen days due to lack of cases with labouring women and an official holiday that are (**1 May, 3 June, 6 June, 30 June, 23 July, 11-15 August, 31 Augest, 6 October, 9 November**).

Results:

Table (1): showed that, (27.5%) of the studied sample their age was less than 25 years with mean 32.9 ± 7.9 years. Concerned to residence, (95%) of the studied sample residing in urban areas. Regarding to educational level, (55%) of the studied sample had diploma education. Also, (47.5%) of the studied sample their years of experience were more than 15 years with mean 11.9 ± 6.49 year. Moreover, the studied sample not attended previously training program related to supportive measures during labour.

Table (2): showed that, there was a marked improvement in knowledge of the studied sample about labour supportive measures post implementation of an training program with highly statistically significant difference at ($P= < 0.01$)

between pre, immediate post and follow up implementation of an training program.

Table (3): displayed a highly statistically significant improvement of studied sample's total practices of labour supportive measures after implementation of training program.

Table (4): showed that, (100%) of studied sample the training program enhances nurses' practices and the objective of the training program was simple and clear. Also, (97.5%) of studied sample satisfied about the educational sessions cover the objective, number of participant was suitable to the place of training and material of the training program was effective and scientific.

Table (5): showed that, (90%) of the barriers that prevent nurses to comply with the implemented training program were shortages of nursing staff. Also, (87.5%) of the barriers were too much emergencies case and mothers' misconceptions regarding nursing care provided during labour.

Table (1): Frequency distribution of the studied sample according to their general characteristics (n=40).

Items		N	%
Age (Year)			
21 - < 25 years		11	27.5
25 - < 30 years		6	15
30 - < 35 years		8	20
35 - < 40 years		7	17.5
40 - 45 years		8	20
\bar{x} S.D	32.9 ± 7.9		
Residence			
Rural		2	5
Urban		38	95
Educational level			
Diploma		22	55
Technical Institute degree		16	40
Bachelor degree		2	5
Years of Experience			
<5 years		11	27.5
5 - < 10 years		4	10
10 - < 15 years		6	15
≥ 15 years		19	47.5
$\bar{x} \pm S.D.$	11.9 ± 6.49		
Attending training program related to supportive measures during labour			
Yes		0	0
No		40	100

Table (6): Illustrated that, there was a highly statistically significant relation between studied sample's total practice about labour supportive measures at pre and post training program and their level of education & at post training program and their age and years of experience. Also, there was statistically significant relation at pre training program and their age and years of experience. While, there was no statistically significant relation at pre and post training program and their residence.

Table (7): showed that, there was a positive correlation between total studied sample's knowledge related to labour supportive measures and their total practice at pre, immediate post and follow up the program, where p-value = (<0.01).

Table (8): showed that, there was a positive correlation between total knowledge and practice of the studied sample about labour supportive measures and their satisfaction at follow up training program, where p-value= (<0.01).

Table (2): Frequency distribution of the studied sample according to their knowledge regarding to labour supportive measures at pre, immediate post and follow up 4 weeks post the program application (n=40).

Items	Pre training program		Immediate post training program		Follow up training program		χ^2	p-value
	N	%	N	%	N	%		
Definition of labour supportive measures.								
Correct	1	2.5	38	95	35	87.5	56.31	0.000**
Incorrect	39	97.5	2	5	5	12.5		
who is the supportive persons attended during labour								
Correct	1	2.5	35	87.5	32	80	57.81	0.000**
Incorrect	39	97.5	5	12.5	8	20		
Types of labour supportive measures								
Correct	2	5	36	90	32	80	41.01	0.000**
Incorrect	38	95	4	10	8	20		
Physical supportive measures								
Correct	3	7.5	32	80	30	75	46.46	0.000**
Incorrect	37	92.5	8	20	10	25		
Emotional supportive measures								
Correct	17	42.5	38	95	36	90	45.98	0.000**
Incorrect	23	57.5	2	5	4	10		
Informational supportive measures								
Correct	23	57.5	40	100	35	87.5	24.76	0.000**
Incorrect	17	42.5	0	0	5	12.5		
Importance of labour supportive measures								
Correct	1	2.5	35	87.5	32	80	68.29	0.000**
Incorrect	39	97.5	5	12.5	8	20		

(**) High Statistically Significant at P ≤0.01

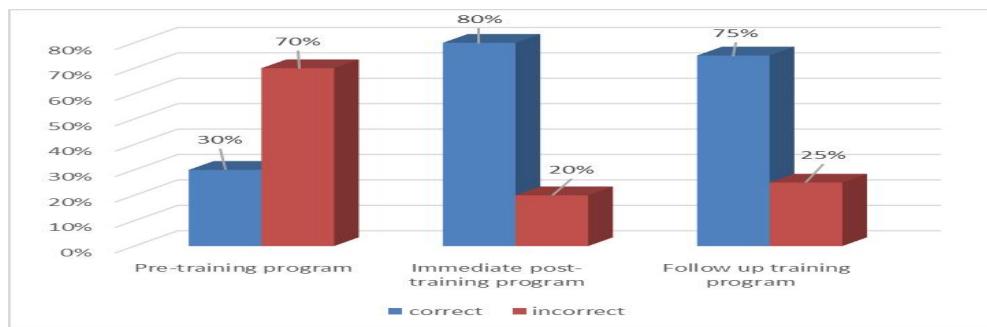


Figure (1): Frequency distribution of the studied sample according to their total knowledge regarding to labour supportive measures at pre, immediate post and follow up 4 weeks post the program application (n=40)

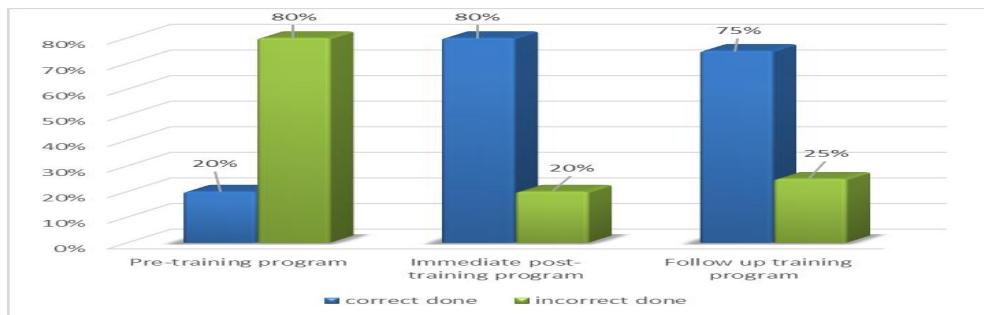


Figure (2): Frequency distribution of the studied sample according to their total practices of labour physical supportive measures provided to labouring women pre, immediate post and follow up 4 weeks post the program application (n=40).

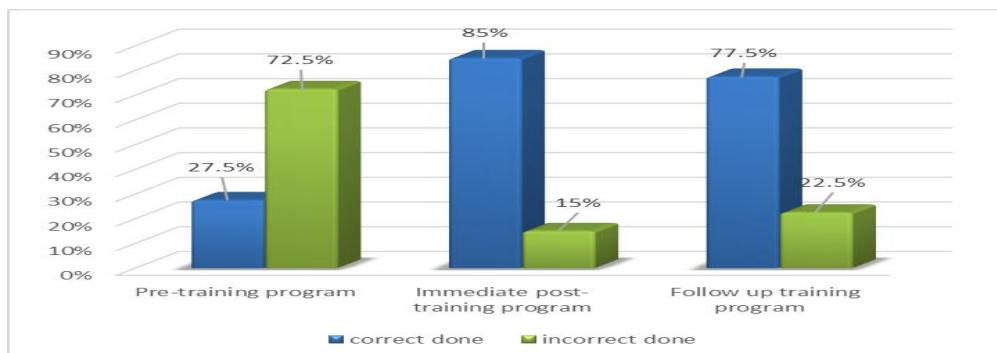


Figure (3): Frequency distribution of the studied sample according to their total practices toward information provided supportive measures to labouring women pre, immediate post and follow up 4 weeks post the program application (n=40).

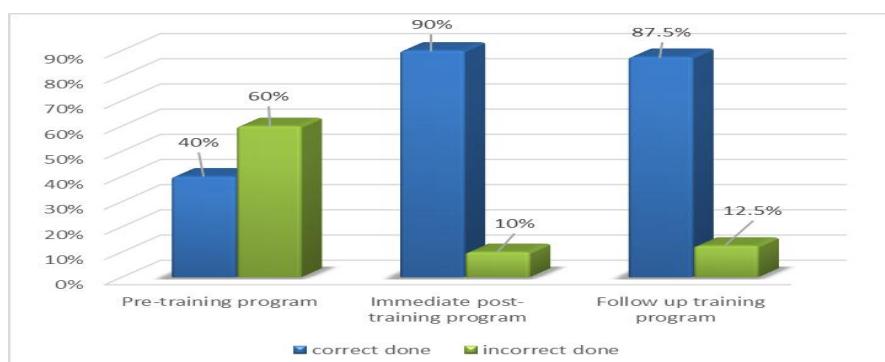


Figure (4): Frequency distribution of the studied sample according to their total practices toward emotional supportive measures provided to labouring women pre, immediate post and follow up 4 weeks post the program application (n=40).

Table (3): Frequency distribution of the studied sample according to their total practices regarding to supportive measures provided to labouring women at pre, immediate post and follow up 4 weeks post the program application.

Total sample's practices	studied	Pre training program	Immediate post training program	Follow up training program	Friedman test			
	N	%	N	%	N	%	χ^2	p-value
Correct done	8	20	35	87.5	32	80	28.71	0.000**
Incorrect done	32	80	5	12.5	8	20		

(**) High Statistically Significant at $P \leq 0.01$

Table (4): Frequency distribution of the studied sample according to their satisfaction regarding to labour supportive measures at follow up the program (n=40).

Items	Satisfied		uncertainly Satisfied		Unsatisfied	
	N	%	N	%	N	%
training program updated knowledge about supportive measures during labour	38	95	2	5	0	0
training program enhances nurses' practices	40	100	0	0	0	0
training program objective was clear and simple	40	100	0	0	0	0
material of the training program was effective and scientific	39	97.5	1	2.5	0	0
Sitting of implementing training sessions was comfortable and organized	35	87.5	5	12.5	0	0
Number of participant was suitable to the place of training.	39	97.5	1	2.5	0	0
The educational sessions cover the objective and content of the training program	39	97.5	1	2.5	0	0
The educational session time didn't interfere with nurses working schedule.	36	90	4	10	0	0

Table (5): Frequency distribution of the studied sample according to the barriers that prevent nurses to comply with the implemented labour supportive measures at follow up the program. (n=40).

Items	Yes		No	
	N	%	N	%
Increasing labouring cases flow rate.	32	80	8	20
Shortage of nursing staff.	36	90	4	10
Too much emergencies case which lead to a lack of good communication with patients.	35	87.5	5	12.5
The presence of many visitors.	32	80	8	20
Engaged nurses with administrative duties.	20	50	20	50
Mothers' misconceptions regarding nursing care provided.	35	87.5	5	12.5

Table (6): Relation between the studied sample's general characteristics and their total correct practices related to labour supportive measures at pre and post training program.

	Items	Total practice at pre training program				Total practice at post training program					
		Correct (n=8)	N	%	χ^2	p-value	Correct (n=35)	N	%	χ^2	p-value
Age (year)	21 - <25	6	75				11	31.4			
	25 - <30	2	25				6	17.1			
	30 - <35	0	0.0		9.10	0.015*	8	22.9			
	35 - <40	0	0.0				5	14.3	14.89	0.001**	
Residence	40 - 45	0	0.0				5	14.3			
	Rural	0	0.0		0.96	0.523	0	0.0			
	Urban	8	100				35	100	0.974	0.55	
Level of Education	Diploma	0	0.0				17	48.6			
	Technical										
	Institute degree	6	75		14.3	0.001**	16	45.7			
	Bachelor degree	2	25				2	5.7			
Years of Experience	<5	6	75				11	31.4			
	5 - < 10	2	25				4	11.4			
	10 - < 15	0	0.0		10.6	0.011*	6	17.2	17.22	0.000**	
	≥ 15	0	0.0				14	40			

No significant at $p > 0.05$. (*) Statistically Significant at $P \leq 0.05$. (**) High Statistically Significant at $P \leq 0.01$.

Table (7): Correlation between the studied sample's total knowledge related to labour supportive measures and their total practices at pre, immediate post and follow up 4 weeks post the program application.

Items	Total practices at Pre training program	Total practices at post - training program	Total practices at Follow up training program
Total knowledge at Pre training program.	0.376 0.001**		
Total knowledge at Immediate post training program.		0.427 0.000**	
Total knowledge at follow up training program.			0.408 0.000**

(**) High Statistically Significant at $P \leq 0.01$

Table (8): Correlation between studied sample's total knowledge and practices related to labour supportive measures and their total satisfaction at follow up 4 weeks post training program application.

Items	Total satisfaction at follow up training program	
	r	P- value
Total knowledge at follow up training program	0.432	0.000**
Total practices at follow up training program	0.445	0.000**

(**) High Statistically Significant at $P \leq 0.01$

Discussion

The present study was aimed to investigate the effect of supportive measures training program on nurses' practices during labour. This aim was significantly approved within the framework of the present study's research hypothesis which was nurses who received training program sessions related to supportive measures during labour has

enhanced their knowledge and practice.

The present study finding revealed that the age of nurses were ranged from 21 years to 45 years with an average of 32.9 ± 7.9 years. Regarding to educational level, more than a half of the studied sample had diploma education followed by a Technical Institute degree in nursing and lower percent had bachelor degree (55%, 40% and 5% respectively). The result of the

current study was in harmony with **Thi Hoa L., (2015)** conducted a correlational study aimed to describe and determine the factors related to professional labor support behaviors among intrapartum nurses in the Northeast of Vietnam who showed that the age of intrapartum nurses were ranged from 21 years to 58 years with an average of 37.07 ± 10.38 years. More than a half of them had a certificate from secondary nursing school (57.14%). There was (26.2%) of the participants holding a diploma degree in nursing, and (16.66%) of the subjects attained bachelor degree.

post training program compared to pre training program because staff nurses didn't have knowledge pre training program compare to post training program related to implemented training program about supportive measures during labour.

Also the present study was supported with **Page K., (2020)** conducted a survey-guided education aimed to improve nursing self-efficacy for labor support techniques Implementation of the coping with labor algorithm in the United States who illustrated that the majority among nurses had high level of knowledge post training program compared to pre training program related to implemented program about labour support techniques training program. Furthermore, the present study was agreed with **Bagley C., (2015)** conducted a pretest/posttest descriptive study aimed to design, implement, and evaluate a nursing theory and evidence-based educational program on professional labor support in the Midwest United States who reported that there was a highly significant improvement among nurses regarding total knowledge score post training program compared to pre training program.

Moreover, The present study finding revealed that the higher percent score was emotional supportive measure followed by providing information supportive measure and lower percent score was physical supportive measure during labor.

Furthermore, the present study research findings revealed that, there was a highly significant improvement of nurse's knowledge post intervention compared to pre intervention. The present study findings was consistent with **Murn N., (2019)** conducted a quasi- experimental study aimed to discuss continuous labor support benefits and implementation of an educational program designed to enhance nursing practice with regard to continuous labor support founded that there was significantly improvement of nurses' knowledge.

The present study finding was in harmony with **Ross-Davie, et al., (2013)** who carried out a systematic observational study aimed to test the validity and usability of the "Supportive Midwifery in Labour Instrument" and to test the feasibility and acceptability in the clinical intrapartum setting in Scotland, UK and showed that emotional support behavior was the most important category of support among parturient women. The agreement may be due to this study and the present study was the same objective and the same study sample type.

While the current study, findings were in disagreement with **El Mashad, et al., (2018)** who conducted a comparative descriptive study aimed to investigate parturient women's self-reported measures compared with nurses' compliance with supportive measures during labour in the Mansoura University Hospitals, Egypt and mentioned that the higher percent score was physical followed by providing information supportive measures and lower percent score was emotional supportive measures during labour (38.8%, 28.9%, and 25.2% respectively). The difference between study findings and this study may be related to the different type of research methodology. This research was comparative study, but the present study is applied research.

Concerning nurses' practices, the

present study findings had revealed that a significant improvement in nurses' practices immediately post and follow up intervention. This result is on the same line with **Burgess A. et al. (2019)** conducted a quasi-experimental pre- and posttest study aimed to evaluate the workshops' effectiveness in improving senior nursing students' knowledge and self-efficacy in the provision of labor support in the Mid-Atlantic United States founded that improvement in students' confidence in the provision of labor support after the workshop, inclusion of educational activities which address labor support are imperative. Additionally, this result is in the same line with the present study **Bagley C., (2015)** conducted a pretest/posttest descriptive study aimed to design, implement, and evaluate a nursing theory and evidence-based educational program on professional labor support in the Midwest United States who reported that a highly significant improvement in nurses' practices regarding supportive measures during labour post training program compared to pre training program. Thus, there is a clear role in continuing professional development activities of nurses which have ultimate reflection on improving parturient women's care services.

Additionally, it was observed from present study findings that highly significant relations between nurses' knowledge and their practices. This because nurses' knowledge was considered the base for their practices. This result was supported by **Page K., (2020)** conducted a survey-guided education aimed to improve nursing self-efficacy for labor support techniques and implementation of the coping with labor algorithm in the United States who found a highly significant relation between obstetric nurses' knowledge and their practices.

Moreover, the present study findings had pointed out our attention toward the importance of implemented

training program contributes to the development and updated nurses with advanced knowledge regarding supportive measures during labour and enhances nurses' practices. Moreover, the majority among studied sample was suggested to replicate the present study training program to other nurses in another setting in the future to enhance nurses' knowledge and practices. The present study findings was supported with **Agha S. et al., (2015)** conducted a cross-sectional survey aimed to evaluate medical students' satisfaction with simulation based learning strategy in Riyadh, Saudi Arabia who demonstrated that maternity nurses has been become more satisfied post the implemented training program compared to pre training program.

Finally, the present study findings illustrated that the main barriers that prevent nurses to comply with the implemented supportive measures training program for labouring women were due to shortage of nursing staff, increasing sudden emergencies cases and mothers' misconceptions regarding nursing care provided during labour (90%, 87.5%, 87.5% respectively). The present study findings was on the same line with the study **El-Mashad H. et al., (2018)** conducted a comparative descriptive study aimed to investigate parturient women's self-reported measures compared with nurses' compliance with supportive measures during labour in the Mansoura University Hospitals, Egypt founded that too much emergency situation and work load were the main barriers that prevent them to comply with supportive measures during labour.

Conclusion:

There were a highly statistically significant improvement in nurses' knowledge and practices immediately post and follow up 4 weeks post training program application compared to the pre-training program. So the present study hypothesis was significantly approved.

Recommendation:

- Implementation of labor supportive measure training program on different childbirth units to improve nurses' practice.

Further study:

- Investigate parturient woman's satisfaction with childbirth process after implementing labor supportive measures.
- Study effect of labor supportive measures on childbirth process out-come.
- Re applycate the present study in another setting and on a large sample size.

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