Effect of self-prepared birth plan on obstetrical outcome of primiparous women

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Abstract

Background: Birth plans have different formats to help women gain better experiences of child birth. **Aim**: To evaluate the effect of implementing a self-prepared birth plan on obstetrical outcome of primiparous women. **Design**: A quasi-experimental comparative design (study and control group). **Subjects**: A purposive sample of 120 pregnant women and have been divided into two groups (the study group who entered in a birth plan to receive plan care during childbirth, a control group who received the routine hospital care) 60 pregnant women for each group. Setting: The study was carried out at antenatal clinic and labour unit in Obstetrics & Gynaecology Department at Kafr-El Sheikh General Hospital. **Tools:** A structured interview questionnaire, Birth plan fulfillment checklist, Childbirth outcomes sheets, and childbirth satisfaction rating scale. **Results**: That there was a highly significant difference in all stages of birth plan form during 1st, 2nd and 3rd stages between the study and the control group at (P≤.000), and there was a highly statistically difference between control and study group regarding maternal outcome (p >.000) the bottom line after implementation, there was a highly statistically significant differences regarding women satisfaction and experiences (P≤.000). **Conclusion**: The pursuance of birth plan has a significantly effect on childbirth outcomes, women satisfaction and women experiences. The birth plan reported a better effect on childbirth (maternal and fetal) outcomes among the study group compared to the control group. **Recommendation**: Spreading awareness of labour ward and encourage them to provide health instructions about the use of birth plan on increasing level of women's satisfaction and improve maternal & neonatal outcomes.

Keywords: Self-prepared birth plan, obstetrical outcome, primiparous women

Introduction

The birth plan was initially implemented in the Spanish Health Service in 2013 as part of the National Health Service's Strategy for Normal Childbirth Care, which encourages woman-centered care based on the most recent scientific information. Birth plans were created in the context of the medicalization of the childbearing process, which pushed maternity care away from the woman's expectations and requirements **(Biescas et al., 2017).**

A birth plan is a written communication tool prepared by a pregnant woman, which involves her preferences for the management of her

labour and delivery. Birth plans have different formats to help women gain better experiences of child birth. One format is a list of options that women could use during labour and delivery. Another format consists of open questions by which women can indicate their preferences **(Kuo, et al., 2018).**

The common elements of the birth plan include requests to ambulate during labour, drink fluids as desired, to receive the baby to the abdomen after birth, and to have support women in attendance **(Biescas et al., 2020).** They also often contain a list of things that the woman wishes to avoid, such as continuous fetal monitoring, episiotomies, pain medications, and analgesic. Most women who write birth plans didn't needed to medical birth with few interventions **(Davis et al., 2019).**

Childbirth education can be helpful for pregnant women and their families to develop their birth plan; make decisions about labour and birth; choose pain management methods; and prepare for breastfeeding and parenting **Aragon et al., (2020)**. Childbirth preparation classes also prepare women to identify unexpected complications that may contribute to maternal mortalities such as gestational hypertension, postpartum haemorrhage and infection **Malata et al., (2016).**

Women's satisfaction about childbirth preparation classes is as important as their knowledge. Women's low satisfaction is associated with delay in seeking medical advice and poor understanding of medical conditions. Although the impact of childbirth education on women's knowledge has been reported in different studies, women's satisfaction with childbirth preparation classes has not been systematically examined **Anderson et al., (2018).**

Some women who give birth for the first time are more stressed about adapting to their new role as a mother and their responsibilities about caring for the baby. These women are more likely to attend childbirth preparation classes **Jakubiec et al., (2017).** Childbirth education can be helpful for pregnant women and their families to develop their birth plan. Make decisions about labour and birth; choose pain management methods; and prepare for breastfeeding and parenting **Gokce et al., (2018).**

Nurses have an important role in providing information and increasing understanding as well as keeping communication going between a woman and her provider **Lothian et al., (2018).** The birth plans has become more successful and efficient in enhanced birth outcomes by health care team including maternity nurses as they communicate and educate with pregnant women about childbirth this will lead to improvements in women's health, particularly in maternal mortality **Fleming et al., (2017).**

Significant of the study

The creation of a birth plan helped to ameliorate a disabling fear of childbirth. Women stated that it was helpful to think about and write down their preferences, and know that their needs would be attended to. To date, discussion, educating about birth plan, and implementing it are not documented, however it can improve quality of care and increase communication between the pregnant women and health care providers, the fulfillment of women's expectations and feeling of control from antenatal to the childbirth period have not investigated **Kuo, et al., (2018).**

Introducing birth plan in the regime of care during antenatal care is novel in Egypt. There are limited number of researches in Egypt that revisions on the topic of birth plans and this is the first study examined its effect on childbirth. From this, more researches need to be conducted to better understand the effect of the birth plans in improving birth outcomes also, to promote women satisfaction more positively. This wouldn`t be happened by unless the health care staff adopting and educating the women about birth plans in preparation for childbirth and hospital policies supporting this approach.

Aim of the study

The present study aims to evaluate the Effect of implementing a self-prepared birth plan on obstetrical outcome of primiparous women.

Research Hypotheses

Pregnant women who involved in the birth plan will receive more designed child birth care; also will exhibit better childbirth outcomes.

Research design

A Quasi-experimental research design was utilized non-randomized trial and a descriptive study for control group. A quasi-experimental research design (study/control group) was adopted in this study. It is a research design that involves the manipulation of independent variables similar to experimental research design **(LoBiondo-Wood & Haber, 2018).**

Research setting

The present study was carried out at antenatal clinic and labour unit in Obstetrics & Gynaecology Department at Kafr-El Sheikh General Hospital, during the period from the beginning of September 2021 to the end of February 2022. This hospital was selected because they had a high number of deliveries annually.

Subjects

A purposive sample of 120 pregnant women was taken. This is a quasi-experimental/non-randomized trial and a descriptive study conducted with irrelevant groups using the study and control group among these women, the sample of the study included 120 women (60 in the experimental group and 60in the control group) from the total sample 1200 women attending the previous setting through the year 2020 and the pregnant women were allocated to the study according to the following inclusion criteria for both the experimental and control group were being between 18 and 35 years of age, being in the 36th to the ≥41 week of pregnancy, normal Pregnancy, being primiparous, having no pregnancy complications or systemic diseases and welling to participate in the study.

The sample size was calculated using the following formula: Considering a level of significant of 5%, and power of study of 80%, the sample size can be calculated using the following formula:

$n = [(Z_{\alpha/2} + Z_{\beta})^2 \times \{2(SD)^2\}]/$ (mean difference between the two groups)^2

Were

SD = standard deviation

$Z_{\alpha/2}$: This depends on level of significant, for 5% this is 1.96

Z_{β}: This depends on power, for 80% this is 0.84

Therefore,

$n= [(1.96 + 0.84)^2 \times \{2(17.0)^2\}]/ (10.7)^2=60$

Based on the above formula, the sample size required is 60 pregnant women in each group.

Tools of Data Collection

First tool: A Structured Interview questionnaire, this tool was designed by the researcher after reviewing related literature; it was written in a simple Arabic language and included the characteristics of the studied women such as age, educational level, occupation, residence, monthly income, and gestational age.

Second tool: Birth Plan Fulfillment checklist (Kaso,. & Addisse, 2012). It included two parts:

Part A- Birth plan expectations sheet which was designed in the form of open-closed ended questions based on the standard childbirth worksheet. Then translated into Arabic & distributed to pregnant women in the study group to filled birth plan in the outpatient clinic in order to assess their expectations during childbirth (as respecting, presence of birth attendants, dignity, encourage movement and proper management during childbirth, no restriction on oral fluid, the arrangement of the delivery room, their wishes about the management of the delivery, the interventions they wanted to avoid during the delivery, and their expectations about the infant in the postpartum period. The control group was asked about the existence of birth plans. The control group did not have any birth plans. The data collection form investigating the childbirth process included nine questions.

Part B- childbirth characteristics that were adopted from **(Ndeto et al., 2014)** to evaluate the implementation of designated birth plan care during childbirth. It was filled by the investigator and included care during 1st stage (9 items) such as (complete history taking, physical examination, the partogram, fetal monitoring, emotional support, movement, encourage moving during labour, allow frequent change of positions, provide pain relieve measures, and administer oxytocin in dilatation. Care during 2nd stage included (2 items) such as (Encourage pushing during delivery, perineal condition) 3rd stage included (4items) such as (delay cord clamping, immediate baby care, facilitate skin to skin contact, breast feeding. Each item was scored one for done each step while zero score was given for not done. The higher scores indicated better effect of a birth plan during childbirth.

Third tool: Childbirth Outcomes Sheet, used to assess childbirth duration outcomes as onset of childbirth were (2items), childbirth experience which included (2 items), presence of complication also (2items), fetal outcomes and hospitalization days which involved (Apgar score at 1st, and 5th minute and baby weight).

Fourth tool: Childbirth satisfaction rating scale for measured degree of satisfaction women's' regarding childbirth experiences. It consisted of 40 questions from 1 to 34 the responses will be comprises of three point ranged from (1) dissatisfied, (2) satisfied, (3) very satisfied. Questions 35 & 36 were open ended for the woman to contribute her overall satisfaction/dissatisfaction with her child birth experiences. The questions from 37 to 40 the responses will be comprises of four point ranged from (1) negative, (2) positive. The total score≥12 indicated positive experiences <12 indicated negative experiences.

Tools Validity

The tools constructed by the researchers were submitted to five

scholastic nursing specialists in the field of maternity nursing to test their content validity. Modifications were carried out according to their recommendations. Tools validated for clarity, appropriateness, and completeness of their content.

Administrative and Ethical Considerations

The research approval obtained from the Dean of Faculty of Nursing to Director of Kafr-El Sheikh General Hospital and the Manager of Obstetrics Department before starting the study. Verbal consent obtained from pregnant women participants in the study; a clear and simple explanation of nature and the aim of the study. The participants were assured that all data are used only for research purposes. Each participant was informed that participation is voluntary. Participants' anonymity and confidentiality were secured.

Pilot Study

A pilot study was carried out on 10% (12 pregnant women) for each group of the total sample size 1200 pregnant women to test the applicability and clarity of the included questions, estimate the time needed for each subject to fill in the questions. According to the results of the pilot, no modifications of the tool after pilot study; thus, these pregnant women were included in the main study sample.

Field work

The study was carried out from the beginning of September 2021 to the end of February 2022, covering a period of six months. The researcher has collected data at two days/ weekly (Saturday, Tuesday) from 9.00 a.m. to 1.00 p.m. The average number of participants interviewed per week was 6-7 women. The researcher interviewed individually, introduced herself to each woman with the inclusion criteria to participate in the study during her antenatal follow-up visit in the outpatient clinic. The researcher obtained the data from both groups through the interviewing questionnaire and asked the participants (study &control groups) to telephone them to determine the time of childbirth. The interview took from 30 to 35 minutes with each woman in study group after admission to the antenatal clinic. For the control group: As the childbirth started, they have received routine care for the hospital: As the childbirth started, they have received routine care as care during the first stage of labour in attendance of researcher, which included auscultating fetal heart, taking vital signs, assessment uterine contraction, vaginal examination, and oxytocin administration , care of the second stage included perform episiotomy, delivery of head baby and then active care of the third stage without any additional instructions or interventions. However the study group: In the delivery preparation visit, the researcher continue to introduce part A-Birth plan expectations sheet to pregnant woman to choose and fill it, explain and discuss the childbirth plan was conducted with pregnant women, the researcher focused on a relay the preparation & childbirth care as care during the first stage of labour in the presence of the researcher, which included (complete history taking, perform physical examination, provide emotional support in child birth, fetal monitoring continuously , partogram , encourage moving during labour , and frequent change of position , use pain sedation, oxytocin given in late dilatation. The care of the 2nd stage contains; encourage

pushing during delivery, perineal status. Then active care of the 3rd stage regarding delay cord clamping and facilitates early skin to skin contact. In addition, Arabic booklet about the mentioned of the topics was given for pregnant women when the childbirth started, the researcher had evaluated the implementation of a self-prepared birth plan through characteristic of childbirth sheet, then after childbirth complete the tools for both the study and the control groups. Finally, the researcher asked the women if she was satisfied with her labour and delivery by using childbirth satisfaction rating scale.

Outcome

The effect of implementing a self-prepared birth plan on obstetrical outcome of primiparous women was evaluated.

Limitation of the study

The study sample was nominated from a single setting, so a generalization of the findings could not be accessible.

Statistical design

The statistical analysis of data was done by using SPSS program (statistical package for social science version22). The demographic data and clinical characteristics were summarized as the mean, SD for continuous variables, and as frequency counts (percentages) for categorical variables, statistically significant difference between study and control groups was tested by student t-test and Chi square test. Spearman correlation Co-efficiency test was used to test association between variables, P is used at <0.05 level of significance, at confidence interval 95%.Comparison of mean & SD between both groups regarding satisfaction, duration of labour and Apgar score was tested by student t-test. Comparison regarding causes of satisfaction & dissatisfaction, mode of delivery and pain level was tested by Chi square test. Variables, and as frequency counts (percentages) for categorical variables**.**

Results

Result findings of the current research are presented in four tables and three figures each one describing the study factors.

Table (1): Shows that, mean age of study group were 25.3 ± 3.24 and the control group were 21.8± 3.67, 83.7% of study group had secondary education compared to 81.3% of the control group, 76.7% of study group were housewife compared to 80% of control group. In addition 61.7% of the lived in rural areas compared to 56.7% of the control group, regarding the family income 76.7% of study group compared to 65% of the control group were the income not enough. Also, the gestational age of the study group was 37.3±0.25 and the control group was 37.1±0.21 and there were no statistically significant difference (p>0.05).

Table (2): Shows that, there was a highly statistically significant difference in the most stages of birth plan care form during three stages 1st 2nd and 3rd among the study and the control groups (p≤ 0.001).

Table (3): Shows that, there was a statistically significant difference in Mean ± SD of the first stage and total outcome of the study group compared to the control group at(p≤ 0.05).

Table (4): Shows that, 85% of the study group were spontaneous child birth compared to 71.7% were induced childbirth of the control group, 76.7% of the study group had satisfactory experience of childbirth compared to 48.3% of the control group. In addition 11.7% of study group had abnormal fetal heart rate complication compared to 31.7% in the control group; there were a highly statistically significant difference at ($p<0.001$).

Figure (1): Shows that, 97% of studied group had higher satisfaction compared to 23.3 % of the control group. Regarding women experiences about labour & delivery the study found that, 81.7% of study group had positive experiences compared to the control group which recorded only 36.7% had positive experiences. There was a highly statistically significance difference among the study and control groups p=0.001.

Figure (2): illustrates that, the majority (81.7%) of study group had normal Apgar scores after childbirth. Also, 66.6% of control group had normal Apgar scores after childbirth.

Figure (3): Reveals that, the majority (86.7% &78.3%) of study and control groups were approximately similar the baby weight at birth is normal.

Table (1): Frequency distribution of the studied two group of women according to their demographic characteristics (n=120)

Items	Study group (n=60)		Control group (n=60)		X2	p-value
	N	%	N	%		
Age / years						
18- < 25	25	41.7	31	51.7		
25 < 30	15	25.0	14	23.3	1.8	0.07
30-35	20	33.3	15	25.0		
Mean ± SD	25.3 ± 3.24		21.8± 3.67		t=1.710	
Educational level						
Basic education	50	83.3	49	81.7	0.7	0.6
University	10	16.7	11	18.3		
Occupation						
House wife	46	76.7	48	80.0	10.6	0.005
Worked	14	23.3	12	20.0		
Residence						
Urban	23	38.3	26	43.3		
Rural	37	61.7	34	56.7	1.37	0.136
Monthly income						
Enough	14	23.3	21	35.0	4.72	0.327
Not enough	46	76.7	39	65.0		
Gestational age/weeks:						
36	30	50.0	32	53.3		
37-40	27	45	22	36.7	0.7	0.5
≥41	3	5.0	6	10		
	37.3±0.25		37.1±0.21		t=1.469	

Statistical insignificance difference (p>0.05) , T = independent

Table (2): Distribution of the studied two groups of pregnant women regarding childbirth characteristics of care (1st, 2nd & 3rd stage) (n=120).

Birth plan care through three stages	Study group (n=60)		Control group (n=60)		X2	P value
	N	%	N	%		
1st stage						
History taking (complete)	60	100	45	75.0	21.43	.000**
Perform physical examination	55	91.7	49	81.7	0.75	0.354
Provide emotional support in childbirth	52	86.7	25	41.7	45.12	.000**
Fetal monitoring continuously	49	82.7	28	47.7	37.85	.000**
Partogram done	44	73.3	26	43.3	14.11	.001**
Encourage moving during labour	47	78.3	31	51.7	11.85	.001**
Allow frequent change of positions	52	86.7	37	62.7	10.59	.001**
Use pain analgesics	58	96.7	42	70.0	31.15	.001**
Oxytocin given in late dilatation	50	83.3	38	63.3	49.62	.001**
2nd stage						
Encourage pushing during delivery	51	85.0	58	96.7	14.68	.001**
Perineal condition	31	51.7	59	98.3	48.3	.001**
3rd stage						
Delay cord clamping Immediate care	44	73.3	25	41.7	68.2	.001**
Facilitate early skin to skin contact (kangaroo position) Breast feeding	60	100	27	45.0	79.61	.001**

No statistically significant difference (Ns) (p > 0.05), ** A highly statistically significant difference at (P ≤ 0.001).

Table (3): Mean ± SD of childbirth outcome regarding the total studied women (n=60).

Total	Study group (n=60)		Control group (n=60)		T-test	P value
	Mean ± SD		Mean ± SD			
1st stage	10.63	2.18	12.56	3.8	7.06	0.05*
2nd stage	3.01	1.07	2.74	0.47	3.98	0.13
3rd stage	0.41	0.13	0.31	0.49	1.38	.210
Total outcome	14.05	3.38	15.61	4.76	9.63	0.05*

No statistically significant difference (NS) (p > 0.05),*A statistically significant difference at (P ≤ 0.05).

Table (4): Maternal outcomes among studied two group of women (n=120).

Maternal outcomes	Study group (n=60)		Control group (n=60)		X2	P value
	NO	%	NO	%		
Onset of childbirth						
Spontaneous	51	85.0	17	28.3		
Induced	9	15.0	43	71.7	6.76	.004
Childbirth experience						
Satisfactory experience	46	76.7	29	48.3		
Un satisfactory experience	14	23.3	31	51.7	8.65	.000**
Presence of complications						
Abnormal fetal heart rate	7	11.7	19	31.7		
Meconium stained aspiration	1	1.7	5	8.3	19.36	.000*
Perineal lacerations	3	5.0	14	23.3		
Hospitalization days						
One day	55	91.7	46	76.7	0.123	.432
Two days	5	8.3	14	23.3		

Ns= no statistically significant difference (p > 0.05), ** A highly statistically significant difference (P ≤ 0.001).

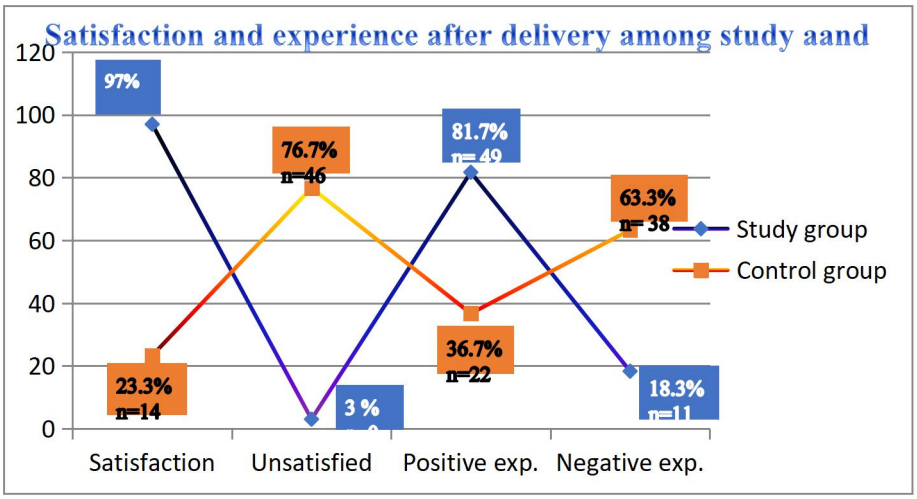

Figure (1): Number & Percentages of the studied women according to satisfaction and experiences after delivery (n=120).
** A highly statistically significant difference (P ≤ 0.001).

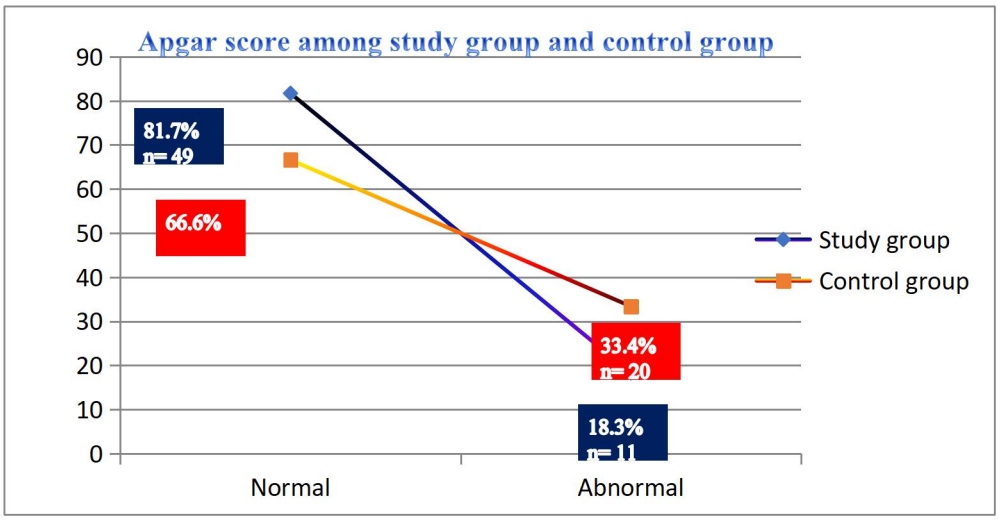

Figure (2): Fetal outcome (total Apgar score) among the study and control groups of women.

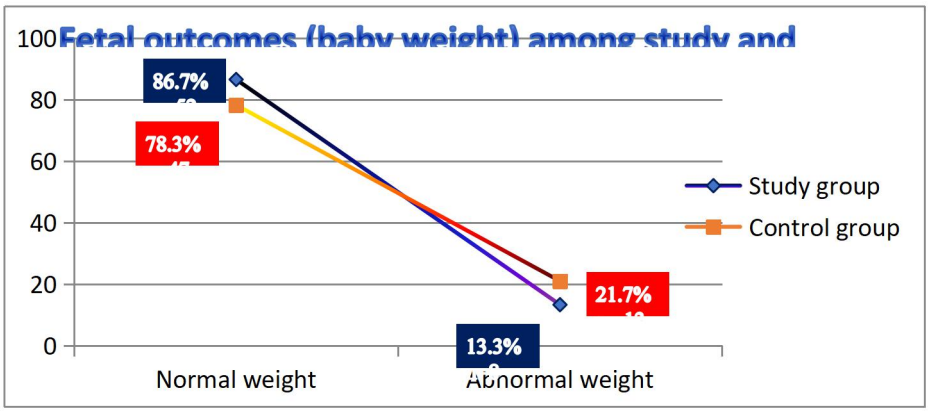

Figure (3): Fetal outcome (baby weight) among the study and control groups of women (n=120).

Discussion

A birth plan is necessary documents including woman's expectations about her childbirth process care given directed toward promotion birth outcomes **(Welsh & Symon 2018)**. Prenatal training is an important area in which nurses and midwives can work independently. It provides information to pregnant women about the ways to cope with delivery pain, and the interventions and initiations they may encounter during the birthing process. Among the techniques used to cope with delivery pain a good outcome should be that every woman should be satisfied with the care and support she received during pregnancy, delivery and postpartum periods and to feel that she and her baby have been the center of care **Güder et al., (2019)**.

The current study illustrated that, there are no statistically significant difference between the study group and control group regarding the age, educational level, occupation, residence, monthly income and gestational age/weeks at p >0.05 and independent t test for women's' age and their baby' gestational age at (t=1.710 & 1.469) respectively. These findings were highly supported with the study of **Soliman (2020),** who study "Effect of implementing a birth plan on women's childbirth outcomes and Empowerment" in Egypt, mentioned that there was no are no statistically significant difference in demographic characteristics of women at both study group and control group.

Regarding the childbirth characteristic, there was highly significant difference in the most stage of birth plan care during three stages 1st, 2nd and 3rd stage among study and control group ($P \leq 0.001$). The results of the current study noticed that all women have periodic complete history, perform physical examination, provide emotional support, fetal monitoring continuously, perform partogram, help to deal with pain, decrease analgesic which high compliance by medical staff and oxytocin application. Our results could be clarified that the birth plan helps to direct the obstetrical nurses to give the optimal level of health care throughout the childbirth process and correct their misunderstand that women with birth plans have unrealistic expectations to childbirth outcomes. This result was concordance with **Campbell et al., (2018)** in study entitled " Effectiveness of birth plans in increasing use skill care at delivery" in Tanzania who found that study women reported high better in all stages compered to control women with high statistically significant ($p<0.01$). **Lothian (2017)** recommended that the pregnant woman should be free to move about during the deliver supported in having different positions rather than only lying on her back. The researcher believes that the pregnant women in the study group received positive support from their husbands, or from the healthcare professionals, in walking and/or changing positions and other items during 1st stage, this difference between both groups study and control, might have been caused by the fact that the study group of the present study also in 2nd and 3rd stages were aware about the benefits of birth plan, items of the childbirth preparation training they had received.

Concerning childbirth outcome after implement the birth plan, there was a statistically difference at Mean ±SD of the first stage and total outcome of childbirth stages among the study group compered to control group at ($p\leq 0.05$). **Mohamed et al., (2018),** studied " Effect of implementing a birth plan on women's' childbirth experiences and maternal & neonatal outcomes" and noted that statistically significant difference found between study and control groups regards to total outcomes. On other hands this results was disagree with **Davis et al., (2019),** who documented that women were received plan for childbirth once they compliance during 1st stage the supplement was completed by educational guidelines during 2nd and 3rd stage.

Regarding maternal outcome, the results of the current study shows that the more than three quarter of the study group had satisfactory experiences of childbirth compared to less than half of control group. In addition, a few percent

of study group had complications as abnormal fetal heart sound compared to nearly one third of control group; there were a highly statistically significant difference ($p<0.001$). The current study came in agree with **Monardo et al., (2018),** who studied "Patient communication, satisfaction, and trust before and after use of birth plan" in Hawaii, and reported that the highly satisfaction and positive experiences post-delivery in the study group using instruction and birth plan compared to the control which didn't use birth plan and instruction. Furthermore, **Hassanzadeh et al (2021),** concluded that birth plans and childbirth programs provided for the women's needs and increase the level of birth experience lead to decrease the complication and days number in hospital which may occur during and after the process of labour.

Concerning women satisfaction & experiences the majority of study group had higher satisfaction and positive experiences compared to the control group, child birth preparation, birth planning, midwife preparation, and medical & social support are activities that could be organized the women's needs and promote the best satisfaction birth and experiences. There was a highly statistically significance difference between the study and control groups $p=0.001$. These results came in the line with **Berger et al., (2017),** who conducted a study entitled "Birth plan non-adherence: Impact on birth satisfaction, interventions and perceived birth trauma" and determined that the women that had birth plans were more satisfied with their delivery than those who did not have birth plans. Also, the results of the current study was consistent with **Pinar et al., (2018),** entitled "Evaluation of the impact of childbirth education classes in Turkey on adaptation to pregnancy process, concerns about birth, rate of vaginal birth, and adaptation to maternity" who demonstrated that women who attended childbirth preparation classes had a higher level of knowledge; responded better to their labour pains; and initiated breastfeeding earlier than the control group. These findings were in inconsistent with previous studies as **Capitulo et al (2015),** who reported that the birth plan is not necessary; instead, labour and birth units should provide evidence-based care and birth experience if the best care is available and standards are met, there should be no need for birth plans. From the researchers point of view the mothers in this study who had childbirth preparation training developed their birth plans in a more realistic manner; this might have affected the study results. If instruction is improved among the pregnant women visiting the outpatient clinics, the midwives and nurses working there well an increase in trust between them, birth plans will be communicated with midwives and nurses. This communication will help midwives and nurses play an active role in the development of birth plans. From this perspective, the study suggests that midwives and nurses play an active role during antenatal training classes, and gain awareness to development the birth plans.

In accordance to fetal outcomes such as Apgar score and baby weight the study results illustrates that, the majority of study group had normal Apgar scores and baby weight after childbirth. And, more than two thirds and more than three quarter of control group had normal Apgar scores and baby weight respectively after childbirth. These results came in line with **Wong et al., (2017),** there were no statistically significant

difference about Apgar score and also the baby weight in the control and study group p=.46. Also this result were confirmed with **Knight et al., (2017)**, who studied "The effect of maternal age and planned place of birth on intrapartum outcomes in healthy women with straightforward pregnancies" and reported that there was no statistical difference in childbirth outcome as Apgar score and baby weight.

Conclusion

The implementation of the birth plan has strongly effect on the childbirth outcomes and women's satisfaction, as the birth plan reported a higher implementation of designed childbirth care and a better effect on childbirth (duration, maternal and fetal) outcomes toward the study group compared to the control group. Also, there was a highly statistically significant differences in the total positive satisfaction scores after implementing birth plan at (p<0,001) in the study group compared to the control group. The birth plan has a positive effect on mode of delivery and reduce caesarean, there was an improve Apgar score of newborn after using birth plan.

Recommendations

Based on the results of the current study, the following can be recommended: Spreading awareness of labour ward and encourage them to provide health instructions about the use of birth plan on increasing level of women's satisfaction and improve maternal & neonatal outcomes, policy makers designing standardized hospital birth plan to improve maternity care and evaluate the implementation of the birth plan, spreading awareness about midwifery role on implementing birth plan, training staff and select skilled birth attendance for implementing birth plan, further study is needed to investigate the birth outcome after using birth plan.

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