

RESEARCH ARTICLE

## Effect of Respectful Maternity Care and Effective Communication during labor on childbirth satisfaction: an interventional study

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### ABSTRACT

**Background:** The recommended respectful maternity care (RMC) developed by WHO and effective communication (EC) between mothers and health staff have a direct positive effect on women's childbirth experience and satisfaction. This study aimed to examine the effect of RMC and EC on mothers' satisfaction with childbirth by considering women's demographics and obstetric characteristics. **Methods:** The study used an interventional design and was conducted at the Shahid Doctor Khalid Teaching Hospital in Koya/Iraq. One hundred women (50 control, 50 intervention) were recruited for this study. Fifty labouring women were randomly selected and enrolled for WHO standard RMC and EC. The control group intervened only in routine hospital care. Sociodemographic, obstetric and childbirth satisfaction data were collected during all stages of labor. The 30-item Birth Satisfaction Scale (BSS) was used to measure childbirth satisfaction. The Mean of BSS was found for intervention and control groups according to sociodemographic and obstetric factors. **Results:** The Mean of BSS was significantly higher in the intervention group (103.10±9.93) compared to the control group (86.54±10.04) (p. value was 0.001). The mean of BSS was significantly low in the younger age group, primipara, episiotomy, long hospitalization, delayed cervical dilatation, and longer duration of labour. **Conclusions:** This study found that RMC and EC are highly efficient in improving satisfaction. In the intervention group, low-level education, low perceived economic status, long hospitalization, longer cervical dilation, and the first stage of labor do not significantly affect childbirth satisfaction. Primipara and episiotomy were the main fundamental causes for low childbirth satisfaction in both groups.

**Keywords:** Recommended Maternal Care, Effective Communication, Childbirth Satisfaction, Sociodemographic, Obstetric Characteristic,



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## INTRODUCTION

Respect during maternal care is essential for birth outcomes, women's childbirth experiences, and quality of maternal care. WHO has developed a bunch of standard respective maternal care (RMC) and recommended it to be applied during labour. These criteria of maternal care included that labour should be treated with dignity, privacy, and confidentiality and ensure freedom from harm and mistreatment. In some countries, the standard respectful maternity care during childbirth is not provided for half of the labourers (Bulto et al., 2020) (Raval et al., 2021)(Kasaye et al., 2021) (Ferede et al., 2022) (WHO, 2018). Moreover, good Effective Communication (EC) between maternity care providers and women in labour has also been recommended (WHO, 2018) since the lack of interpersonal relationship and support of the health staff with the women during childbirth have been addressed as an obstacle for practising of RMC (Mgawadere & Shuaibu, 2021).

Some factors such as women's age, occupational status, pregnancy plan, mode of delivery, and complications during labour and delivery have also affected receiving respectful maternity care (Yismaw et al., 2022).

A study approved that the recommended respectful maternity care would positively impact women's childbirth experience and satisfaction (Hajizadeh et al., 2020). Childbirth satisfaction is caused mostly by the predicted factors of communication, interpersonal relationships, respect and dignity, emotional support, as well as health systems aspects such as pain management, delivery hygiene and birth environment (Mocumbi et al., 2019) (Haller et al., 2021) (Childbirth et al., 2017). In this respect, childbirth satisfaction could measure the quality of maternity care and a woman's and her newborn's health and well-being (Akca et al., 2017). (Goodman et al., 2004). Mothers who have had unsatisfactory births would mostly remember their child's delivery solely through pain, rage, fear, grief and the suggestive of traumatic amnesia (Reynolds, 1997), and women express high levels of satisfaction when the attitudes of the staff during labour were supportive (Boorman et al., 2014).

In developing countries, low performance of respective maternal care may cause low childbirth satisfaction. Since childbirth satisfaction rates are mostly low in developing countries, for instance, the satisfaction rate among African women is almost less than one-third (Maung et al., 2021). While the birth satisfaction rate is much higher in developed worlds (Hollins et al., 2015)(Urbanov et al., 2021). RMC recommendations are more exclusive and constructive and require the necessary infrastructure for the delivery room and women's individual needs from health staff; some other interventions could also positively enhance childbirth satisfaction (Nomura et al., 2022) (Liu et al., 2021) (Mortazavi, 2021) (Bohren et al., 2020). Therefore, performing RMC recommendations

would enormously change women's satisfaction with childbirth. Childbirth satisfaction would also be affected by socioeconomic, medical and obstetric characteristics (Mocumbi et al., 2019) (Hamm et al., 2019) (Madhumithaa & Kirubamani, 2021).

Only a few studies have examined the effect of respectful maternity care and effective communication during labor on the mothers' actual satisfaction with childbirth. (Chang et al., 2018). This study aimed to examine the effect of respectful maternity care and effective communication on mother satisfaction with childbirth by considering women's demographics, obstetric characteristics, and birth experience and outcomes.

## METHOD

### Study design and subject recruitment

The study used an interventional design and was conducted at the Shahid Doctor Khalid Teaching Hospital in Koya/Iraq from February 2, 2020, to January 8, 2021. One hundred women (50 control, 50 intervention) were recruited for this study. Any women who speak Kurdish, labouring at 38-42 weeks gestation, born a healthy term neonate, have a cephalic presentation, expecting to deliver a singleton, and are absent of major obstetric or medical pregnancy complications, and agreed to participation were selected to the study. Mothers with a history of mental health issues and cephalopelvic disproportion were excluded.

Informed consent was obtained, and a woman was randomly assigned to either the intervention or the control group.

### Study tool for data collection

The questionnaire has included sociodemographic and obstetric variables and the Maternal Satisfaction scale (BSS) items. The 30-items BSS has been used in many cultures and languages. The Kurdish version of the scale was used that has demonstrated virtuous validity and reliability; Cronbach alpha was (0.740). The BSS measures women's perceptions about childbirth to determine their level of satisfaction with the childbearing experience (Barbosa-Leiker et al., 2015; Martin & Martin, 2014).

The BSS is composed of three major components: stress experienced during delivery (14 items), women's attributes (8 items), and quality of care (8 items). The responder answered 30 questions on a 5-point Likert-type scale based on their level of agreement with the following statements: 21 of the questions were graded on a scale of 1 (strongly disagree) to 5 (strongly agree), and 9 of the statements were reverse scored from 1 (strongly agree) to 5 (strongly disagree). The BSS ranged from (30 to 150); a high score on the measure indicated that mothers were satisfied with childbirth.

## Effect of Respectful Maternity Care

A mean sum of 30 questions was used for women's birth satisfaction and data analysis.

The data for the study were gathered during labouring with the expectant mother's admission to the delivery room. At that point, the researcher randomly selected women for either the control or experimental group. The researcher also gave participants satisfaction with childbirth measures through a face-to-face interview in the postpartum room immediately before discharge (between the 1<sup>st</sup> -and 4<sup>th</sup> hours).

### Research intervention

The interventions consisted of WHO-respected maternal care and effective communication, which have been implemented according to WHO standards for the recommendations.

Ten items of effective communications that determined the maternity care staff approach with the laboring women were selected, and these items have been approved by the Guideline Development Group (GDG) (WHO, 2018). Other interventions encompass the 15-item WHO RMC, which included friendly care (7 items), abuse-free care (3 items), timely care (3 items), and discrimination-free care (2 items).

### Ten items of Effective communication were applied as follows:

After agreeing to participate in the research and randomly selecting, women in the intervention group are welcomed warmly and respectfully by the trained midwife (with at least ten years of delivery experience). The researcher and the trained midwives introduced themselves to the labouring woman, her companions, and her families. Women were addressed by name and accompanied to the private room where they would deliver their babies (this took 5 to 10 minutes).

Each woman was given a brief history of sociodemographic, obstetric and contraction features such as frequency, duration, and strength of contractions membrane status (intact or ruptured) for ten to fifteen minutes.

For vaginal examination, after taking permission and explaining the aim of the procedure, women were kindly asked to sit on the bed and lie on their backs. Then, cervical dilation and the percentage of cervical effacement were performed for the women by the trained midwife.

Each woman was monitored for vital signs, fetal heart rate, and labour pain every half-hour during the first stage of labour and estimating contractions every ten minutes (Electronic fetal monitoring and Partogram are not used as usual in any hospital in the research area and Kurdistan).

Between contractions, all women were provided information about the labour process, clearly explaining the stages of labour and the

procedures that would be performed, such as (fetal monitoring, intravenous therapy, and medication was given). Furthermore, all women were asked to have any other questions regarding childbirth since women in the research area and in Kurdistan have not been receiving prenatal childbirth preparation services.

During intrapartum, women were treated with continuous support and empathy. Women were encouraged to indicate their needs, and they were suggested to have a small meal or water, empty their bladder, and cleanse their genitals.

All women and their families were regularly updated about the labour progress, and they were confirmed about adequate care that was provided for the mothers and the newborns.

### 15 items of Respectful Maternity Care were applied as follows:

The trained midwife admitted the labouring women and the midwives explained the study's aim of continuous emotional and physical care. In addition, women's understanding of the staff languages was confirmed.

As a part of applying the friendly care component of the RMC, pain management techniques and pharmacological agent administration have been clearly explained to the mother. Medicines were obtained from the hospital pharmacy on order, and bedcovers, pads, and other equipment were well prepared for the women. Additionally, women were assisted in pursuing their religious practice during labour (as a timely care).

To enhance the comfort and progress of labour, women's needs, such as assisting women in changing positions on the bed for side-lying, squatting, standing, and walking, were provided to women regardless of whether they requested or not. During the second stage of labour, women were advised to push spontaneously when they feel an urge, and empowered women to push in their way without shouting at them. Women have not been forced to push, and they are informed to rest and relax between contractions to save energy for the next contraction. All women were free from any verbal abuse, had the right to informed consent and maintained privacy, and they were treated with respect (Abuse-free care).

After birth, the newborns were wrapped in warm blankets. All women were examined for any vaginal or perineal tears, and they were supported to lie in a comfortable position. After the placenta was delivered, the perineum was cleaned, and the women were transferred to the postpartum unit if there was no tear. All women were protected from any insults directed towards themselves or their companions (Discrimination-free care). The researcher and midwives spent approximately 8-10 hours with each woman in the intervention group from admission to discharge from the hospital.

### The control group (usual care in the hospital)

The control group were treated with the usual care in the hospital, and all labouring women were directly proceeded to the delivery room and had to wait longer for cervical dilation. No women are usually greeted well by the staff. Labouring women in the control group were not provided maternal care, and services such as preparing beds and rooms and examining the women to detect cervical dilation regularly were not afforded to them women. Obtaining medicine from a pharmacy has been neglected and delayed for at least 10 to 20 minutes. Women's privacy to such extent was not preserved since at least 5 laboring women were treated in the delivery room. Women did not allow to have food and drink due to the possibility of failing vaginal delivery and admitting to cesarean section delivery. Data about women in the control group were always recorded while they were not informed about the delivery procedures, and their families were provided adequate information about delivery outcomes.

### Statistical analysis

Data analysis was processed using the application of Statistical Package of Social Sciences (SPSS) version 22.0, and all data have been demonstrated in Table. Descriptive analysis has been shown by showing the mean and standard deviation of the birth satisfaction scale for each categorical variable for both the control and intervention groups. T-test and ANOVA were used to test the statistical relationship between sociodemographic and obstetric variables and childbirth satisfaction. The Pearson correlation test was used to know the strength relationship of continuous variables with the BSS. Statistical significance was considered at a P value<0.05.

## RESULTS

Table 1 indicates that the mean of BSS was significantly higher in the intervention group

(103.10±9.93) compared to the control group (86.54±10.04) (p. value was 0.001). This study showed that the mean BSS was significantly associated with the level of education and women's perception of family income among the control group. P. values were less than 0.001 and 0.037, respectively. The mean of BSS was less among the primary school level of education (77.08±10.96) and perceived insufficient family income (81.54±10.73). The mean of BSS was increased with the ages among control and intervention groups, while the relation was significant only in the intervention (P value= 0.010).

Table 2 has demonstrated that parity is significantly associated with childbirth satisfaction among control. P. value was 0.012. Mothers with prim para had a low mean of BSS (78.82±12.246). Among the intervention group, BSS had a significant association with parity, fetus gender and perineal status during birth; P. values were 0.016, 0.007 and 0.005, respectively. The low mean of BSS was found among prim-para (96.30±9.764), fetus male gender (99.54±9.880), and those who suffered episiotomy (97.80±10.65).

Table 3 illustrated that BSS had a significantly strong negative relationship with the hospitalization period (R= -0.640, p. value= 0.000) and period of the first stage of labour (R=-0.366, p. value=0.009) among the control group. Meanwhile, BSS had a significant and positive relationship with gestational age (R= 0.285, p. value= 0.045) and cervical dilation on admission (R= 0.418, p. value= 0.002). Among the intervention group, BSS had a significant positive relationship with the women's gravida (R= 0.377, p. value= 0.007) and fetal weight (R= 0.333, p. value= 0.018).

Table 1: the mean of BSS according to sociodemographic characteristics in the control and intervention groups.

Variables	Control			Intervention		
	N	Mean of BSS	p. value	N	Mean of BSS	p. value
<b>Age Groups</b>						
< 20 year	7	77.43±15.82	0.050	5	94.20±10.56	0.010
20 – 29 years	24	87.54±7.90		29	101.38±8.26	
30 – 39 years	16	89.50±7.57		14	108.86±10.24	
40 and above	3	84.00±13.85		2	110.00±8.48	
<b>Total</b>	<b>50</b>	<b>86.54±10.04</b>		<b>50</b>	<b>103.10±9.93</b>	<b>0.001</b>
<b>Residency</b>						
Urban	25	83.84±8.96	0.127	28	104.32±9.89	0.600
Suburban	22	89.77±10.74		16	101.94±8.42	
Rural	3	85.33±9.45		6	100.50±14.32	
<b>Education Levels</b>						
Can not read and write	5	93.80±7.95	0.001	6	107.67±12.66	0.265
Can read and Write	12	87.75±7.97		7	105.00±7.81	
Primary School graduate	13	77.08±10.96		9	100.11±11.84	
Secondary School graduate	11	90.45±7.68		20	100.60±7.66	
Institute and College Graduate	9	89.78±5.63		8	107.63±11.40	
<b>Occupation of Mother</b>						
Employed	5	85.60±9.29	0.245	3	109.67±13.65	0.471
Unemployed	2	100.50±2.12		-	-	
House Wife	42	86.10±10.09		45	102.80±9.84	
Student	1	82.00±0.00		2	100.00±7.07	
<b>family income</b>						
Sufficient	13	91.54±5.02	0.037	10	105.90±11.590	0.494
Barley Sufficient	24	86.54±10.65		35	102.80±10.064	
Insufficient	13	81.54±10.73		5	99.60±3.209	

Table 2 shows the means of BSS according to maternity and obstetric variables in the control and intervention groups.

Variables	Control			Intervention		
	N	Mean of BSS	p. value	N	Mean of BSS	p. value
<b>Parity</b>						
Prim-para	11	78.82±12.24	0.012	10	96.30±9.76	0.016
Multi para	28	88.96±7.87		30	103.50±9.22	
Grand multi para	11	88.09±9.63		10	108.70±9.01	
<b>Abortion</b>						
0	38	86.66±10.52	0.420	39	101.59±9.18	0.233
1	9	83.33±7.87		6	109.67±9.91	
2	2	94.50±7.77		4	106.75±15.43	
<b>Gender</b>						
Male	25	85.24±10.08	0.366	26	99.54±9.88	0.007
Female	25	87.84±10.04		24	106.96±8.62	
<b>Neonate admission in Intensive Care units</b>						
No	48	86.52±10.12	0.948	2	95.50±12.02	0.274
Low APGAR Score	2	87.00±11.31		48	103.42±9.86	
<b>Total</b>	<b>50</b>	<b>86.54±10.05</b>		<b>50</b>	<b>103.10±9.93</b>	
<b>Previous Caesarean section</b>						

Yes	1	95.00±0.00	0.401	3	98.67±8.08	0.431
No	49	86.37±10.07		47	103.38±10.04	
<b>Attending antenatal care during the last pregnancy</b>						
Yes	18	85.28±10.23	0.511	17	102.00±9.97	0.579
No	32	87.25±10.03		33	103.67±10.02	
<b>Mode of Birth</b>						
Spontaneous vaginal	4	88.50±7.59	0.689	16	104.69±8.92	0.444
Induced vaginal	46	86.37±10.28		34	102.35±10.41	
<b>Perineal Status</b>						
Intact	7	88.00±5.65	0.067	22	108.05±8.66	0.005
Episiotomy	8	83.75±6.40		10	97.80±10.65	
Tear	25	89.56±9.30		18	100.00±8.56	
Episiotomy and Tear	10	80.20±13.68		-	-	

**Table 3: The Pearson correlation of the BSS with the birth outcomes and obstetric characteristics in control and intervention groups**

No	Variable	Control		Intervention	
		R	p. value	R	p. value
1	Sleeping in 24 hours (hours)	0.103	0.475	-0.015	0.916
2	Sleeping in late pregnancy (9 Months) in 24 hours (hours)	-0.159	0.271	0.073	0.616
3	PCV	0.236	0.099	-0.157	0.278
4	Mother weight (kg)	-0.155	0.284	-0.011	0.942
5	Gravida	0.217	0.130	0.377**	0.007
7	Number of Caesarean sections	0.121	0.401	-0.114	0.431
8	Times of Attending antenatal care during last pregnancy	-0.168	0.245	-0.121	0.402
9	Gestational age (in weeks)	0.285*	0.045	-0.054	0.710
10	It is time to try conception	-0.065	0.653	-0.185	0.199
11	Duration hospital	-0.640**	0.000	-0.112	0.437
12	Cervical dilatation on admission	0.418**	0.002	0.065	0.653
13	Duration of First stage (minute)	-0.366**	0.009	-0.080	0.581
14	Duration of Second stage (minute)	-0.267	0.060	-0.227	0.113
15	Duration of Third Stage (minute)	0.045	0.758	-0.157	0.275
16	Pain perception every half an hour	-0.153	0.290	-0.071	0.623
17	Oxytocin IU before delivery, babe	-0.267	0.061	-0.043	0.769
18	Head circumference (cm)	0.161	0.263	0.079	0.584
19	Chest circumference (cm)	0.136	0.346	0.127	0.380
20	Fetal weight (gm)	0.226	0.115	0.333*	0.018
21	Cervical dilatation (cm)	0.320*	0.024	0.048	0.741

## DISCUSSION

The aim of this study was to know the effect of WHO-recommended Respectful Maternity Care (RMC) on women's birth satisfaction by considering the sociodemographic characteristics, obstetric history, birth experience and outcomes. This study has found significantly high birth satisfaction in the group that received RMC and

EC compared to a control group. The difference in average was from 86.54 to 103.10 degrees of BSS. Basically, the childbirth satisfaction rate among the control group (86.54) was less compared to Scotland (115) (Hollins et al., 2015), Turkish(103) (Bal & Ucar, 2022) and Slovakia (111) (Urbanov et al., 2021). Thus, low childbirth satisfaction in our study may related to the quality of care in the delivery room and mistreatment during childbirth (Maung et al., 2021). WHO

recommended respectful maternity care was most effective in improving childbirth satisfaction. In the Rwanda study, among many interventions and clinical care measures, multivariate logistic regression showed that respecting mother's values and privacy was the most effective in improving childbirth satisfaction by ten times more than controls (Habimana et al., 2022). Some other interventions such as skin-to-skin contact, counselling, presenting the relative during delivery, accompanied by doula, breathing technique, epidural anaesthesia, early breastfeeding, fluid intake, and professional attendant could improve childbirth satisfaction to such extent in specific age groups (Nomura et al., 2022) (Liu et al., 2021) (Mortazavi, 2021). But RMC recommended by WHO is more effective, contractual and feasible to implement, and it requires adequate infrastructure for the delivery room and maternity ward (Bohren et al., 2020). In the current study, women received the WHO RMC and EC with high standards, and a significantly high childbirth satisfaction rate was observed compared to women in the control group by considering sociodemographic and obstetric characteristics.

Low ages are more prone to have a lower satisfaction rate. In an Ethiopian study, childbirth satisfaction was affected by age to a high degree (Taddese, 2020). In this study, ages less than 20 years were mostly associated with low birth satisfaction among control and RMC with EC attending group, but among those who attended RMC with EC, the relationship was significant. Age less than 20 years old were mostly considered to be primipara, and they would have first experience with delivery. However, there are several studies that have shown a significant relationship between parity and birth satisfaction, but age did not show significance (Hamm et al., 2019) (Mortazavi, 2021) (Liu et al., 2021). Low age and education levels have unrealistic expectations about labour, which leads to low satisfaction in experiencing childbirth (Gaúcha, 2019). Younger women may assume a higher standard of maternal care while they do not receive it. Therefore, RMC's recommendation with EC could eliminate unrealistic expectations and enhance satisfaction. A study in Erbil has concluded that women's expectations about delivery room services are related to birth satisfaction; however, the study has shown no significant difference in expectations about delivery room services for different ages (Ahmed, 2021).

The current study showed that the RMC with EC could have a good effect on BSS in low levels of education women and women's insufficient perception of family income. A significantly low mean of BSS was observed among the primary school level of education and perceived insufficient family income. These differences have not been observed in the RMC with the EC group. Insufficient family income but not low education has shown a significant relation with low childbirth

satisfaction in Iran (Mortazavi, 2021). However, a study from developed countries in Italy showed that none of the socioeconomic variables have a significant relation with the birth satisfaction rate (Fumagalli et al., 2020). While in a developing country, Mozambique's socioeconomic status, such as education, marital status, and occupation, significantly impacts birth satisfaction (Mocumbi et al., 2019).

This study found that parity is significantly associated with satisfaction among control and RMC attending groups. Mothers with prim para remained with low birth satisfaction in both groups. Several studies have found the highly significant BSS among multipara women (Fumagalli et al., 2020). (Mortazavi, 2021) (Urbanov et al., 2021) (Hamm et al., 2019) (Madhumithaa & Kirubamani, 2021), while a Chinese study found that primipara was presented with high satisfaction (Liu et al., 2021). Multipara women may mainly adjust to birth difficulties due to more experience; this adjustment has caused good birth satisfaction. Primipara also has a longer labour duration and complicated and more stressful childbirth. A study found that a lower birth satisfaction rate has been observed mostly among complicated and primipara childbirth (Hollins et al., 2015). Longer wait for labor and high perception about delivery room have negatively affected the birth satisfaction in Ethiopian study (Taddese, 2020).

Among the intervention group, BSS was significantly low in those who suffered from the episiotomy. The episiotomy group was also near to having a significantly low BSS in control. Studies confirmed that any perineal and birth canal complication, such as perineal pain or oedema, would have a high effect on birth satisfaction (Liu et al., 2021) (Hollins et al., 2015). More interventions and complications during birth have negatively affected birth satisfaction. Epidural usage, oxytocin administration, vacuum-assisted birth, episiotomy and tear perineum all have a significant relation with low birth satisfaction (Fumagalli et al., 2020). Spontaneous vaginal delivery has been found to be significantly associated high satisfaction rate, while these findings have not been confirmed in this study (Hollins et al., 2015).

The relation of fetus gender with birth satisfaction remains controversial. In this study, among the intervention group, BSS was significantly low in the male gender. In China's study, female fetal sex was associated with low birth satisfaction (Liu et al., 2021). In the Iranian study, birth satisfaction did not show a significant difference in fetal sex (Mortazavi, 2021). Fetus gender relation to childbirth satisfaction may related to cultural preference for male or female babies in those communities.

Several studies have found that antenatal care has a significant impact on birth satisfaction and

women's satisfaction generally (Bal & Ucar, 2022) (Ayalew et al., 2021), while the effect of antenatal care was not confirmed significant in this study. The effect of antenatal care on birth satisfaction remains controversial; other studies from Italy found attending antenatal care had a negative effect on birth satisfaction (Fumagalli et al., 2020). The antenatal visit could enhance women's knowledge about birth experience and postnatal care, such as breastfeeding and postpartum care. Thus, it could have an extended relationship with childbirth expectations.

This study has indicated that birth satisfaction had significantly decreased with the long hospitalization period and period of the first stage of labour among the control group, while among RMC with EC group, these strong relations remain insignificant. Increased duration of labour, particularly active stage, leads to low satisfaction in many studies (Mocumbi et al., 2019) (Hamm et al., 2019) (Fumagalli et al., 2020) (Marimuthu & Murugan, 2021), which may related to high-intensity of pain and produce more anxiety and stress for women. However, in this study, pain perceived by women did not show a significant relation with birth satisfaction.

Birth satisfaction had significantly increased with the gestational age and cervical dilation on admission in our study. These two relations have not been observed among RMC with the EC group. Full-term babies were also related to high satisfaction in Chinese studies (Liu et al., 2021). Gestation age did not show a significant relationship with birth satisfaction (Mortazavi, 2021).

Among the intervention group, the birth satisfaction rate significantly increased with the women's gravida and fetal weight, while these relations were not seen among the control group. A study has improved the same finding: fetal birth weight did have a significant relationship with birth satisfaction (Mortazavi, 2021). Normal birth weight versus preterm was associated with high satisfaction in a Chinese study (Liu et al., 2021). In this study, the fetus's health condition did not show a significant relation with birth satisfaction, while fetal outcomes have significantly determined birth satisfaction (Taddese, 2020). In this study, the mother's weight was not significantly related to the birth satisfaction rate; similar findings have been found in another study, and BMI did not have a significant effect on birth satisfaction (Hamm et al., 2019).

## CONCLUSIONS

This study found that RMC and EC are highly efficient in improving childbirth satisfaction; these would eliminate the negative effect of low-level education, low perceived economic status, long hospitalization, longer duration of cervical dilation, and duration of the first stage of labour on

childbirth satisfaction. Primipara and episiotomy were the main fundamental causes for low childbirth satisfaction that have not been affected by RMC and EC.

## Ethical Approval Statement

This research study, titled " **Effect of Respectful Maternity Care and Effective Communication during labor on childbirth satisfaction: an interventional study**" conducted by [Khalat Karwan Fares, Jamal Kareem Shakor, Hamdia Mirkhan Ahmed], has received ethical approval from the [scientific and ethical committee of the College of Nursing] at [Raparin University].

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## AUTHOR'S CONTRIBUTIONS

All authors contributed equally to the conception and design of the study, data collection, and analysis, and drafted the initial manuscript. All authors critically reviewed and edited the manuscript. All authors approved the final version of the manuscript for submission.

## DISCLOSURE STATEMENT:

The authors report no conflict of interest.

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