

# Effectiveness of Solution-Focused Counseling Therapy on Pregnancy Anxiety and Fear of Childbirth: A Randomized Clinical Trial

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## Research Article

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# Abstract

**Background & Aim:** Fear of childbirth and pregnancy anxiety may affect the desire for normal delivery. No study has investigated the effectiveness of solution-focused counseling on either pregnancy anxiety or all factors comprising fear of childbirth. We aimed to investigate the effects of solution-focused counseling in reducing pregnancy anxiety and fear of childbirth.

**Methods and materials:** This randomized clinical trial study was conducted on 121 nulliparous women in 2019. Participants with moderate to severe fear of childbirth were randomly divided into the intervention and control groups. The intervention group participated in five solution-focused counseling sessions. Before and after the intervention, women filled the anxiety scale for pregnancy (ASP) and the Wijma Delivery Expectancy Questionnaire (W-DEQ). Data were analysed using t-test, paired t-test, and analysis of covariance (ANCOVA).

**Results:** The two groups did not differ in terms of demographic and obstetric variables and pregnancy anxiety pretest scores ( $P>0.05$ ). The means of the posttest total scores and the means of scores for all five factors of the ASP were significantly lower in the intervention group than the control group ( $p<0.001$ ). The adjusted means of total scores and the adjusted means of scores for all six factors of the WDE-Q were significantly lower in the intervention group than the control group ( $p<0.001$ ).

**Conclusions:** The solution-focused counseling reduced pregnancy anxiety and fear of childbirth in women participating in counseling sessions in comparison with the controls. Solution-focused counseling therapy sessions should be held for women with pregnancy anxiety and fear of childbirth.

## Introduction

Pregnancy and childbirth are important events for a woman and her family which are physiological and natural phenomenon. These are experiences which are joyful but can also be fraught with stress and difficulties. The significant changes in anatomy, physiology, and the levels of circulating hormones may concern some women and predispose them to anxiety during pregnancy (1). In addition, many pregnancies occur in certain conditions, such as chronic maternal illness or poor obstetric history (e.g., miscarriage and infertility), which intensify pregnancy anxiety (2). Furthermore, labor pain often causes fear and anxiety in pregnant women. Fear of childbirth and pregnancy anxiety may prevent women from understanding and focusing on the joys of pregnancy so that it affects the desire for a normal birth and the next pregnancy. Recent studies show that 19.6% of pregnant women have a fear of childbirth and the prevalence of severe fear of childbirth is about 6% (3).

Studies indicate that maternal mental health affected the results of normal pregnancy (4). In Nasreen's and colleagues' study in India, pregnancy anxiety influenced the rates of preterm delivery, prolonged labor, low birth weight, and cesarean (5). Pregnant women with anxiety may experience symptoms such as

muscle aches, palpitations, fatigue, headaches, stomachaches, sleep disturbances, nightmares, and insomnia (6). Fear of childbirth is also associated with increased labor pain, prolonged labor, postpartum depression, and increased demand for cesarean (7). Several factors contribute to pregnancy anxiety and fear of childbirth such as having less positive attitudes toward pregnancy (8), nulliparity and young age (9), gestational age, having a history of abortion (10), maternal low education, low household monthly income, and unwanted pregnancy (11).

Various subjects in pregnancy may be the source of pregnancy anxiety, such as concerns about childbirth, fetal health, the quality of care received during childbirth from health professionals, the level of husband involvement in caring for the woman during pregnancy and childbirth and the support received from other family members (12). Pregnancy anxiety and fear of childbirth are provoked exclusively by specific fears and worries of pregnancy and can occur even in a healthy pregnant woman without any history of depression or anxiety (12).

Counseling is an appropriate intervention for critical situations. Delaram and Soltanpour indicated a positive effect of counseling with pregnant women at the time of admission to the maternity ward on their levels of anxiety in labor (13). One of the effective counseling models is solution-focused counseling. De shazer and Bargh (1997) first introduced solution-based therapy in psychotherapy and counseling and the method quickly became popular. The philosophy of this postmodern approach is that changes are inevitable and possible (14). This approach known as hope counseling is based on the belief that patients themselves have the necessary competence and creativity to make changes (15). This approach emphasizes the present time, not the past, and encourages people to focus on their abilities (14). In this approach, clients are helped to find solutions for their current problems, clients' abilities are highlighted, and the focus is put on changeable issues. They are encouraged to think at a time when there is no current problem or they faced the problem in an acceptable way and to use adaptation strategies and think about the different activities that they can do (15). Due to the short time needed, practicality, and using simple and effective techniques, this method is useful for pregnant women who are always looking for quick changes during pregnancy (16). The effectiveness of this approach has been proved on reducing postpartum depression (17) and women's common worries during pregnancy (18).

Beginning a decade ago, the Iranian Ministry of Health initiated a number of policies with the aim of reducing cesarean rates. One component of these policies was to encourage medical schools to hold childbirth preparatory classes for pregnant women )19(. In such classes, midwives aim at bring about positive attitudes towards normal delivery in pregnant women by means of lectures about physiologic childbirth, conducting hospital tours and showing videos about cesarean and normal delivery procedures.

A previous study in Iran indicated that the level of fear of childbirth in participants of these classes significantly increased in comparison with those who received routine care (20) and a meta-analysis on six preventive interventions showed that educational interventions had no effect on reducing maternal anxiety and fear of childbirth (21). In Larson's study in Sweden, routine counseling with women could not

reduce their fear of childbirth in comparison with those who did not receive counselling (22). It seems that women need to find practical solutions to overcome their fears and anxieties. Therefore, methods which empower them to control their fear and anxiety are helpful. The advantage of the solution-focused counseling approach is that people are encouraged to adopt their own adaptation strategies. To our best knowledge, no study has been conducted to investigate the effectiveness of solution-focused counseling therapy on pregnancy anxiety. In addition, no other study has investigated the effectiveness of solution-focused counseling therapy on all factors comprising fear of childbirth. Therefore, we aimed to investigate the effectiveness of group counseling with a solution-focused approach on pregnancy anxiety and fear of childbirth in nulliparous women participating in childbirth preparatory classes.

## Methods

### Study design and setting

This randomized clinical trial was conducted on 132 nulliparous pregnant women who participated in childbirth preparatory classes affiliated with Sabzevar University of Medical Sciences from May 2019 to Feb 2020. Inclusion criteria were as follows: consenting to participate in the study, having the ability to read, being at first, wanted, single pregnancy, having a gestational age of 28-32 weeks, the age range of 18-45, and having no chronic illness or mental illness during the last year. Exclusion criteria were the occurrence of pregnancy complications such as preeclampsia, bleeding, intrauterine death, preterm delivery during the study, and participating in less than 3 sessions of counseling therapy for the intervention group. The first session was held after the end of the childbirth preparatory classes.

### Sampling and randomization

Sampling was performed by the convenient sampling method. One of the researchers attended the last session of childbirth preparatory classes and invited pregnant women to participate in the project. Women were informed that they had the right not to participate in the study, and after participating, they would have the right to leave the study. They were also informed that they might be included in the control or intervention group. Participants were asked to rate their fear of childbirth on a scale of one to ten. Then, women with a score of more than five were selected and questionnaires were distributed among them. To assign them to the intervention and control groups randomly, a list of random sequences of A (intervention) and B (control) was prepared using permuted block randomization with block size of four. Each choice was put in an envelope. Envelopes were allocated to participants from the right to the left side of the class. Participants, the midwife who conducted the sessions, and the midwife who distributed the questionnaires were not blind but the statistician was blind.

Participants in both groups filled out a questionnaire containing demographic and obstetric information, including maternal age, education, occupation, family income, and the sex of the infant based on ultrasound scan report. As the primary outcomes of the study, we measured pregnancy anxiety and fear of childbirth using the Persian Anxiety Scale for Pregnancy (ASP), and the Persian Wijma Delivery Expectancy Questionnaire (W-DEQ), respectively. As a secondary outcome of the study, we measured

pregnancy and childbirth experience with an item which is rated on a 5-point Likert scale [very bad (1) to very good (5)] before the intervention and after the delivery, respectively. The tendency to normal delivery was also measured as a secondary outcome of the study with a 10-point Likert scale [Not at all (1) to Very much (10)] before and after the intervention and after delivery.

The experimental group then participated in five solution-focused counseling sessions; each took about 60 minutes with an interval of one week. Table 1 shows topics covered in each session. The instructor was a graduate in midwifery counseling with a dissertation on solution-focused group counseling on pregnant women's worries (18). The content of the counseling sessions was organized according a relevant resource (16) (table 1). Sessions were held at urban health centers. After the last session, the participants filled out the Persian ASP and the Persian W-DEQ. The control group participated in childbirth preparatory classes, received routine prenatal care, and filled out the questionnaires in 36-37 weeks of pregnancy.

### Sample size

The sample size was determined based on the results of the Toohil et al study (2014) (23). For detecting 10.2 score difference in fear of childbirth between the intervention and control groups from pretest to posttest with a standard deviation of changes in fear in two groups of 18.6 and 16.3, respectively, the sample size was estimated to be 46. Considering 40% sample loss, a sample size of 66 was calculated for each group.

### Instruments

#### **The Anxiety Scale for Pregnancy (ASP)**

Doyle Waters developed the Anxiety Scale for Pregnancy (ASP) in 2001 and confirmed its validity and reliability (24). The original version of the ASP contains 14 items (7 items with negative expression and 7 items with positive expression) and 5 factors consisting of baby, labor, marital, attractiveness, and support. Each item is rated on a four-option Likert-type scale from one (not at all) to four (severe) (14). The minimum and maximum scores obtained from this scale are 14 and 56. This scale has no cut-off point with higher scores indicating higher anxiety. The questionnaire has previously been translated into Persian and its validity has been investigated. The validity study confirmed the content validity, predictive and concurrent validity, and the reliability of the scale. However, the reliability of the factors was poor (25). We reviewed the above mentioned Persian version and converted seven items with positive expressions to seven items with negative expression. The Persian version of the ASP (P-ASP-R) contains 14 items with negative expression and 5 factors including baby (3 items), labor (3 items), marital (3 items), attractive (2 items), and support (3 items). The confirmatory factor analysis confirmed the structure of the P-ASP-R (RMSEA = 0.08, SRMR = 0.076, chi-square / df = 3.09, CFI = 0.96). Cronbach's alpha coefficient for the P-ASP-R was 0.867. The internal consistency of the factors was between 0.568 to 0.815 (26).

## The Wijma Delivery Expectancy Questionnaire (W-DEQ)

Klass Wijma in Sweden developed the Wijma Delivery Expectancy Questionnaire (W-DEQ) to measure fear of childbirth in pregnant women in the late 1980s. The scale consists of 33 items and each item is rated on a six-point Likert scale from 0 (strongly agree) to 5 (strongly disagree). The minimum and maximum scores of the questionnaire are 0 and 165. The primary assessment of the scale showed that the scale is unidimensional. The alpha Cronbach coefficient of the scale was 0.78. The validity of the WDE-Q was confirmed by moderate correlation coefficients between the scores of the WDE-Q and the scores of the Beck Depression Inventory and the Spielberger Anxiety Scale. Wijma proposed two cut off points of 85 and 100 for screening women with severe and intense childbirth fear, respectively (27). Next study proposed scores  $\leq 37$  as mild fear, 38-65 as moderate fear, 66-84 as high fear, and  $\geq 85$  as severe fear (28). The Persian version of the scale consists of six factors including lack of positive anticipation, loneliness, fear, lack of self-efficacy, fear of harm to the fetus, and lack of control. Concurrent validity of the scale was confirmed by the moderate correlation coefficients between the scores of the Persian WDE-Q and the scores of the Spielberger Anxiety Scale ( $r = 0.47$ ) and Childbirth Attitude Questionnaire ( $r = 0.52$ ) ( $p < 0.001$ ). The results of confirmatory factor analysis on the Persian W-DEQ items showed an acceptable goodness of fit indices for the data (RMSEA= 0.075), SRMR=0.078, chi-square/df=2.93,  $p < 0.05$ , CFI=0.95, IFI=0.95). Cronbach's Alpha coefficients for the 32-item Farsi W-DEQ (versions A & B) were 0.914 and 0.919, respectively. The alpha Cronbach coefficient of the Persian WDE-Q is 0.925 and all factors of the scale have a coefficient higher than 0.869 (29).

### Statistical analysis

Data analysis was performed with SPSS software version 18. Shapiro–Wilk test was used to assess the normality of the anxiety and fear scores across all levels of independent variables. A chi-square test was performed to examine the independence of the two groups in terms of qualitative variables (such as pregnancy experience and childbirth experience). The t-test was performed to compare the two groups in terms of quantitative demographic variables, the ASP scores before and after the intervention, and preference for normal delivery. The paired t-test was used to compare the ASP scores in the pretest and posttest in each group. Analysis of covariance (ANCOVA) was used to investigate whether the post-test means of W-DEQ scores, adjusted for pre-test scores, differ between the two groups. Pearson correlation was used to check the ANCOVA assumptions. Significance of tests was set at the level of 0.05.

### Ethical issues

The ethics committee of the Sabzevar University of Medical Sciences approved this study (IR.MEDSAB.REC.1397.125). Women who participated in the study signed a consent letter. The study proposal was registered in Iran clinical trial registry (IRCT20170827035934N3).

## Results

This study was conducted on 132 pregnant women participating in childbirth preparatory classes. Eleven women were excluded from the study due to incomplete questionnaires. Data analysis was performed on 62 participants in the intervention group and 59 participants in the control group (Fig.1). Shapiro–Wilk test showed that the distribution of quantitative data including age and the ASP total scores and its five factor scores in the intervention and control groups were normal ( $p > 0.05$ ). The mean age, gestational age, and maternal education were  $27.9 \pm 1.3$  years,  $26.2 \pm 5.1$  weeks, and  $14.3 \pm 2.8$  years, respectively. The two groups did not differ in terms of age, gestational age, education, employment status, family income, fetal gender, preference for normal delivery and pregnancy experience ( $P > 0.05$ ) (Table 2).

Table 3 indicates that the means of the total score and scores of the ASP factors before the intervention were not different between the two groups ( $p > 0.05$ ). The mentioned means after the intervention were significantly different between the two groups ( $p < 0.001$ ). The reliability of the ASP was 0.89 and 0.92 in the pretest and posttest, respectively.

The percentage of participants with low, moderate, high, and severe fear of childbirth were 5.1%, 14.9%, 10.1%, and 8.2%, respectively. The mean total score of the fear of childbirth and the loneliness and fear factors were significantly different between the intervention and control groups ( $p < 0.05$ ). Therefore, we used ANCOVA to investigate the statistically significant difference in post-test scores between the intervention and control groups by controlling for pre-test scores (Table 4). The correlation between the intervening variables (pre-test scores of all six factors) and the dependent variables (posttest scores of all six factors) was examined and the results showed that the ANCOVA assumptions are met (correlation coefficients were between 0.511 and 0.759 with  $P < 0.001$ ). The reliability of the W-DEQ was 0.902 and 0.965 in the pretest and posttest, respectively.

After the intervention, the mean of the preference for normal delivery was significantly different between the two groups ( $p < 0.001$ ). There was a significant relationship between pregnancy experience measured after childbirth by the two groups ( $p = 0.027$ ) (table 3). All participants in the intervention group were satisfied with participating in the solution-focused counseling sessions.

## Discussion

The results of this study shows that solution-focused counseling therapy reduces pregnancy anxiety with regard to all components of the scale, in the intervention group compared to the control group. Positive results have also been reported in previous study on the effectiveness of solution-focused counseling therapy on pregnancy worries (18). Although our results indicate the effectiveness of solution-focused counseling therapy on all domains of pregnancy anxiety, Karrabi and colleagues reported that this method was not effective in reducing socio-economic concerns of pregnant women (18). The results of our study shows that solution-focused counseling therapy reduces fear of childbirth with regard to all components of the scale, in the intervention group compared to the control group. The results of the present study are in line with the results of Sharifzadeh's study which found a reduction in the total score of the WDE-Q in the intervention group in comparison with the controls (30).

In the present study, solution-focused counseling increased preference for normal delivery in the intervention group in comparison with the control group; however, after the delivery, the preference for normal delivery was not different between the two groups. The fact that participants' actual experience of childbirth was not significantly different between the two groups seems to explain the observed equal level of preference for normal delivery between the two groups after childbirth. This result shows that if the interventions during pregnancy were not accompanied by changes in the conditions, environment, and atmosphere in which women give birth, they would not have a long-lasting effect on preference for normal delivery. It seems that women's increased recognition of their ability to cope with labor pain which was achieved in counseling sessions had a positive effect on their preference for normal delivery during pregnancy.

The results showed that solution-focused counseling could lead to a positive pregnancy experience. The reason that the women in the intervention group had a better experience of their pregnancy was probably due to their ability to control their fear of childbirth and pregnancy anxiety. In Nelson's qualitative study of 12 postpartum women in Sweden, positive experience is defined as the ability to cope with pain and having control on the body during labor (31).

During our interactions with women, we encouraged them to find practical solutions to overcome their fears and anxieties. According to the theory of planned behavior, the increased awareness and knowledge about the advantages of a given behavior does not in itself guarantee that individuals will perform the desired behavior. In fact, individuals must come forward, be willing for change, and feel empowered and ready to change (32).

Various methods have been used to reduce anxiety in pregnant women such as spiritual counseling (33). We recommend that in future studies the solution-focused counseling be compared with psycho-educational intervention and spiritual counseling in reducing pregnant women' fear and anxiety. We also suggest that the effects of solution-focused counseling on the mental health of depressed pregnant women be investigated.

The present study was performed on nulliparous pregnant women participating in childbirth preparatory classes, so in generalizing the results to other groups, such as multiparas and those who were only supervised by obstetricians and rural women should be cautious. In addition, we used the ASP and WDE-Q to collect data on pregnancy anxiety and fear of childbirth; so, the limitations of using scales in studies such as the accuracy of the participant in assessing their feelings and their honesty in expressing their feelings should be considered.

The strong point of this study is that we found a robust result in favor of the solution-focused counseling approach. The weak point of the study is that due to the lack of a comprehensive and valid tool for measuring pregnancy and childbirth experience, we used one item to measure pregnancy and childbirth experience. We recommend that in future studies, the pregnancy and childbirth experience scales be translated into Persia and be validated for examining the pregnancy experience.



# Conclusions

Solution-focused counseling reduced the pregnancy anxiety and fear of childbirth in pregnant women participating in counseling sessions in comparison with the controls. Solution-focused counseling was also effective in creating a satisfying pregnancy experience. It seems that women's increased knowledge about childbirth is not enough to reduce women's pregnancy anxiety and fear of childbirth. Women need to find practical solutions to overcome their anxiety and fear.

Solution-focused counseling therapy is a simple way to use alongside childbirth preparatory classes to help women controlling pregnancy anxiety and fear of childbirth. We recommend that this method be used in counseling pregnant women with pregnancy anxiety and fear of childbirth. We also recommend that midwives working in health systems and those who instruct childbirth preparatory classes should be trained in using this method.

# Declarations

## Acknowledgements

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## Conflict of interest

The authors declare that they have no competing interests.

## Authors' contribution

FM designed the study, conducted the statistical analysis, and wrote the first draft of the manuscript. MM and RK led the data collection. All the authors discussed the results, read the first draft, and approved the final manuscript.

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# Tables

Table 1. Topics covered in each session

First session	<p>Greeting, Introducing individuals to each other.</p> <p>Helping clients to formulate their goals based on the solution-focused approach and presenting their solutions in the session,</p> <p>Homework assignment: expressing your anxiety about pregnancy and childbirth fear</p> <p>Feedback of the session</p>
Second session	<p>Greeting, Evaluation of homework assignments.</p> <p>Helping clients to realize their abilities, helping them to understand different perspectives on pregnancy and childbirth.</p> <p>Homework assignment: provide solutions to reduce your fears.</p> <p>Feedback of the session</p>
Third session	<p>Greeting, Evaluation of homework assignments</p> <p>Helping clients identify the positive points of pregnancy and childbirth, admiring and praising clients for positive views, and ignoring negative ones.</p> <p>Homework assignment: choosing the best way to reduce your anxiety and fear of childbirth, using it until the next session.</p> <p>Feedback of the session</p>
Fourth Session	<p>Greeting, Evaluation of homework assignments</p> <p>Help clients identify appropriate ways of thinking, feeling, and behaving instead of the current problematic thinking, feeling, and behavior.</p> <p>Helping clients find other ways to think, feel, and behave instead of what they have done so far. Teaching anxiety reduction and stress management techniques (relaxation, techniques breathing, calming your mind (homework)),</p> <p>Feedback of the session</p>
Fifth Session	<p>Greeting, Evaluation of homework assignments.</p> <p>Summarize, conclude, and determine whether members have achieved their goals.</p> <p>Assess the impact of using the solutions provided to reduce anxiety and childbirth fear.</p> <p>Review previous sessions. Post-test implementation.</p> <p>Thanks and appreciation to the members for attending the sessions.</p>

Table 2. Distribution of participants' demographic/obstetric characteristics (N=121)

Variable	Intervention group (62)	Control group (59)	P
Age (Mean $\pm$ SD)	26.24 $\pm$ 5.26	26.10 $\pm$ 4.88	0.880
Gestational age at pretest (Mean $\pm$ SD)	27.89 $\pm$ 1.58	28.00 $\pm$ 0.98	0.640
Preference for normal delivery (before the intervention) (Mean $\pm$ SD)	6.34 $\pm$ 2.66	5.97 $\pm$ 2.70	0.262
Preference for normal delivery (after the intervention) (Mean $\pm$ SD)	8.71 $\pm$ 1.95	6.39 $\pm$ 2.59	<0.001
Preference for normal delivery (after the delivery) (Mean $\pm$ SD)	7.25 $\pm$ 3.43	6.03 $\pm$ 3.71	0.066
Pregnancy experience (before the intervention) N (%)			0.377
Dissatisfied to moderately satisfied	17 (27.4)	20 (33.9)	
satisfied	32 (51.6)	23 (39.0)	
Very satisfied	13 (21.0)	16 (27.1)	
Pregnancy experience (after childbirth) N (%)			0.027*
Dissatisfied to moderately satisfied	7 (11.5)	18 (30.5)	
satisfied	27 (44.3)	24 (40.7)	
Very satisfied	27 (44.3)	17 (28.8)	
Infant gender N (%)			0.926
male	30 (49.2)	31 (50.8)	
female	32 (53.3)	28 (46.7)	
Income N (%)			0.484 †
Low income	3 (37.5)	5 (62.5)	
Middle or high income	59 (52.2)	54 (47.8)	
Education N (%)			0.444
12 $\leq$	23 (56.1)	18 (43.9)	
> 12	39 (48.8)	41 (51.2)	
Job N (%)			0.887
Housewife	49 (51.6)	46 (48.4)	

Employed	13 (50.0)	13 (50.0)	
Method of childbirth			0.128
Cesarean	14 (40.0)	21 (60.0)	
Normal delivery	47 (55.3)	38 (44.7)	
Method of analgesia			0.059
Entonox	34 (58.6)	24 (41.4)	
Epidural	11 (33.3)	22 (66.7)	
No method	16 (55.2)	13 (44.8)	
Midwife at birth			0.588
Yes	28 (48.3)	30 (51.7)	
No	33 (53.2)	29 (46.8)	
Childbirth experience (Mean $\pm$ SD)			0.059
Not satisfied	11 (64.7)	6 (35.3)	
Low satisfied	4 (28.6)	10 (71.4)	
Moderately satisfied	10 (37.0)	17 (63.0)	
Satisfied to very satisfied	36 (58.1)	26 (42.9)	
†fisher exact test			

Table 3. Scores of the Anxiety Scale for Pregnancy (ASP) before and after the intervention

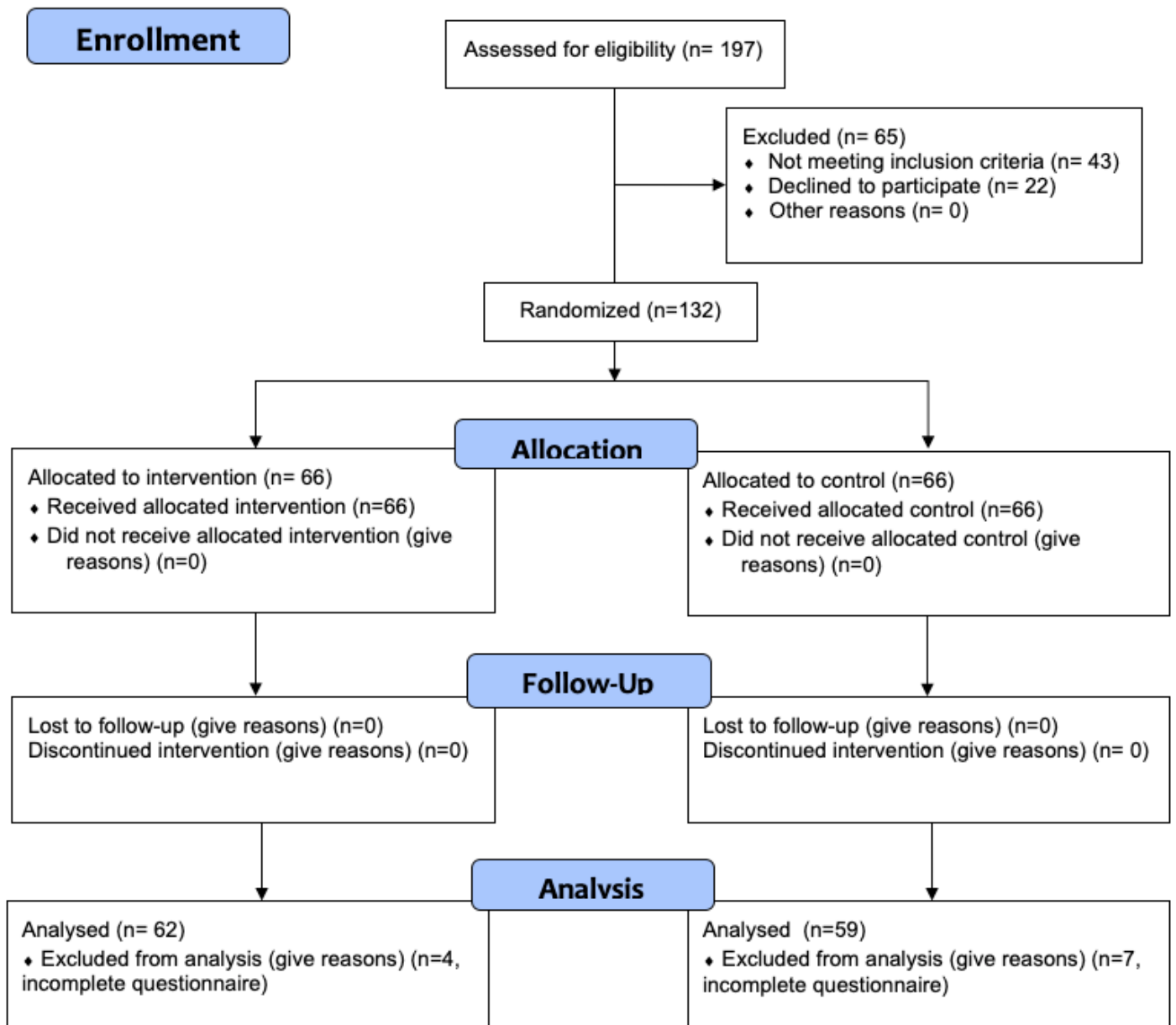


		Intervention group	Control group	t-test	
		Mean ± SD	Mean ± SD	t	P
Total score	Pretest	± 8.5 30.0	± 8.3 31.5	0.9	0.328
	Posttest	± 5.820.3	± 8.031.6	8.9	<0.001
Paired t test	P	<0.001	0.805		
Baby	Pretest	±2.57.9	± 2.68.0	0.3	0.784
	Posttest	± 1.95.2	± 2.38.0	7.3	<0.001
Paired t test	P	<0.001	0.831		
Labor	Pretest	± 2.57.7	± 2.4 8.4	1.5	0.125
	Posttest	± 2.25.1	± 2.18.5	5.8	<0.001
Paired t test	P	<0.001	0.830		
Marital	Pretest	± 2.0 4.8	± 2.2 4.9	0.2	0.848
	Posttest	± 1.23.5	± 2.3 5.0	4.4	<0.001
Paired t test	P	<0.001	0.417		
Attractive	Pretest	± 1.6 4.0	± 1.84.5	1.7	0.083
	Posttest	± 1.32.9	±1.84.6	5.9	<0.001
Paired t test	P	<0.001	0.424		
Support	Pretest	± 2.0 5.6	± 2.0 5.7	0.2	0.824
	Posttest	± 1.0 3.6	± 2.0 5.6	6.7	<0.001
Paired t test	P	<0.001	0.645		

Table 4. Scores of Wijma Delivery- Expectancy Questionnaire (W-DEQ) before and after the intervention.

		Pretest	† Posttest		
Factor	Group	M±SD	M±SE	F	P
Lack of self-efficacy	Intervention	21.6 ± 10.8	12.5 ± 0.9	130.05	<0.001
	Control	24.3 ± 10.2	27.1 ± 0.9		
Lack of positive expectations	Intervention	3.4 ± 2.9	1.9 ± 0.3	73.39	<0.001
	Control	4.3 ± 3.1	5.7 ± 0.3		
Fear of harm to the fetus	Intervention	2.5 ± 2.9	1.3 ± 0.2	22.37	<0.001
	Control	2.7 ± 2.9	2.9 ± 0.2		
Fear of losing control	Intervention	5.3 ± 3.8	2.8 ± 0.3	120.37	<0.001
	Control	6.4 ± 2.8	7.2 ± 0.3		
Feeling lonely	Intervention	11.5 ± 7.8	5.5 ± 0.6	135.16	<0.001
	Control	14.4 ± 7.5	15.7 ± 0.6		
Fear	Intervention	13.1 ± 5.3	7.3 ± 0.5	128.05	<0.001
	Control	15.2 ± 4.8	15.2 ± 0.5		
Overall score of childbirth fear	Intervention	59.7 ± 26.7	40.4 ± 1.7	170.51	<0.001
	Control	70.0 ± 24.9	73.2 ± 1.8		
†adjusted mean score					
ANCOVA analysis					

## Figures



**Figure 1**

Study Flow Diagram