Relationship between pain management and women´s satisfaction during labour. A Randomized Controlled Trial.

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Research Article

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Abstract

Background: The factors related to the satisfaction of women during labour vary widely. Pain relief is one of the fundamental weaknesses, so it could influence the rating of the rest of the satisfaction items. The use of Transcutaneous Electrical Nerve Stimulation (TENS), like a non-pharmacologic pain relief approach, is a safe and effective technique used during childbirth. Measure for Testing Satisfaction (COMFORTS) scale is a specific questionnaire that includes the most important factors associated with the relation between mother satisfaction and the childbirth experience. The aim is to analyse factors influencing satisfaction in pregnant women during labour and its relationship with pain management.

Methods: A randomized and double-blind controlled trial was conducted. All participants completed the satisfaction scale immediately after childbirth. A total of 63 participants were randomly assigned to one Transcutaneous electric nerve stimulation (TENS) device to relieve the pain, with different dose in each patients group. This was measured with two scales; the satisfaction level was measured with the COMFORTS scale and pain was measured with the Visual Analogue Scale (VAS).

Results: the total satisfaction scale mean score was 171.03 (SD 19.69) with an individual item mean of 4.28. Women who expressed a low level of satisfaction had experienced severe pain. A lower degree of satisfaction was observed in women with severe pain (3.03 ± 1.1) than in women with moderate pain (4.53 ± 0.7). Women who have had more than one delivery presented the highest level of satisfaction, followed by nulliparous and those who have had a previous pregnancy.

Conclusions: Overall, high level of satisfaction during labour was obtained; we recommend the use of Transcutaneous electrical nerve stimulation for pain relief to improve general satisfaction.

Trial registration: ClinicalTrials.gov ID: NCT03137251.

Introduction

Childbirth is one of the most exciting moments during people's life. In this period, pregnant women usually suffer from high-intensity pain. There are pharmacological and non-pharmacological treatments to relieve pain, and there are also many different factors that can modify pain perception, like psychological factors or previous painful experiences [1, 2].

Patient satisfaction is a quality indicator of healthcare, and also, a form of participation of the users in the health system. Nevertheless, its evaluation can be complicated because patient satisfaction is a complex conception [3].

Many factors may be involved in the satisfaction of pregnant women during childbirth. Adler [4] in his works described the strongest elements as: pain management, personal pregnancy expectations, benefits of healthcare staff, pregnancy decision making [4–6]. Pain relief is considered a weakness during

childbirth, in such a way that pain management could influence the rating of the rest of the other variables of satisfaction.

In terms of pain modification, in recent years emphasis is being put on non-pharmacological approaches. Specifically, the use of Transcutaneous Electrical Nerve Stimulation (TENS) is an effective and safe technique used in pregnant woman during childbirth. Its application in this case is based on the Gait Control Theory of Wall and Melzack [7]. It is a nonpharmacologic pain-relieving method based on the delivery of pulsed electrical currents through the skin, which reduces pain through both peripheral and central mechanisms. TENS has been studied in most of the painful musculoskeletal conditions, including acute and chronic low back pain [8], neuropathic pain [9], cancer pain [10], colonoscopy [11], and even during hysteroscopy [12].

Alternative methods of pain control provide women with the opportunity to have a positive view of the special moment that is the arrival of the child, increasing satisfaction with their experience in labour. Among the nonpharmacological methods of pain relief in childbirth is the application of transcutaneous nerve electrostimulation [13–17].

In addition, both recent clinical trials and systematic reviews on their results indicate that TENS therapy can be used as a non-pharmacological therapy to reduce labour pain and shorten the duration of the active phase. In addition, the treatment appears safe for both mother and foetus [13, 14, 18]

A few years ago, the parameters used to evaluate maternity care services were maternal or infant mortality rates, caesarean and instrumental delivery rates and a low Apgar score. These are very restrictive parameters for assessing quality, as they do not describe attitudes or processes [19].

Currently, there are some specific questionnaires to measure satisfaction during labour, for instance the “Women’s views of Birth Labour Satisfaction Questionnaire” [20], the “Care in Obstetrics: Measure For Testing Satisfaction Scale” [21], the “Questionnaire Measuring Attitudes About Labour and Delivery”, the “Mackey Childbirth Satisfaction Rating Scale” [3], and the “Measure for Testing Satisfaction (COMFORTS) scale”. The latter is the most complete scale as it includes the most important factors associated with the relation between the satisfaction of the mother and the childbirth experience from our point of view. It is a flexible tool which can be used to identify the aspects that should be changed to improve maternal satisfaction and hence maternal health. It is formed by six subscales: physical environment and respect for privacy, provision of choice, postpartum nursing care confidence in new-born care, and labour and delivery nursing care. It includes forty parameters where participants answered with a 5-point Likert scale the agreement with each statement where 1 = strongly disagree and 5 = strongly agree [21].

The objective of this research is to analyse factors influencing satisfaction in pregnant women during labour and their relationship with pain management, to find those which can be easily modified and adapted to improving patients’ satisfaction and thus, healthcare indicators.

Methods

Design

A randomized and double-blind controlled trial was conducted. All selected participants were invited to complete the satisfaction scale immediately after childbirth. The entire staff of labour room agreed to participate in the survey, but they did not know at any time what patients were included in the trial.

On the other hand, with respect to pain relief, before selecting the patients, investigator 1, who was not involved in the selection and inclusion process, assigned a number to each TENS device defined by a different dose. Investigator 2 generated the random sequence (based on simple randomization) by using a computerized random number generator [22], these processes were concealed from the rest of the staff of the study. After the enrolment in the study, the 63 participants were randomly assigned to one device to help to relieve the pain. The information about the group assignment was not disclosed to the participants and nurses who evaluated the results. Figure 1 shows the progression of the participants throughout the trial.

Finally, a nurse external to the research team collected the data regarding neonatal and obstetric outcomes. Furthermore, the data were analysed by a statistician who was not directly involved in the experimental phase.

Population Characteristics

The sample size and power calculations were performed using a calculator software. The calculations were based on the detection of the minimum relevant clinical difference of 1.3 units on a numerical scale of pain rate of 10 at post-data, a desired power of 80%, and an alpha level of 0.05. These assumptions generated a sample size of 63 subjects. Participants received all other routine obstetric care and were also instructed to choose the most comfortable position. The presence of an accompanying person was permitted during labour and delivery.

63 participants at the Complejo Hospitalario Universitario Insular-Materno Infantil (Spain) were enrolled between May 2, 2017 and August 30, 2017. The inclusion criteria were aged over 18, cervical dilatation of at least 4 cm, a gestational age between 37 and 42 weeks, women with a low-risk pregnancy, a single foetus. Exclusion criteria included: aged below 18, high-risk pregnancy, previous experience with TENS, inability to understand or refusal to sign the informed consent form, patients with pacemakers or automatic implanted cardiac defibrillators, a planned caesarean and cutaneous damage at the TENS application locations.

Data Analysis

The primary outcome was to evaluate satisfaction in patients during childbirth and its relationship with pain relief. This was measured with two scales; the satisfaction level was measured with the COMFORTS scale and pain was measured with the Visual Analogue Scale (VAS). With regards to COMFORTS scale,

twenty-four hours postpartum, the second investigator asked participants to answer questions regarding their satisfaction with the care provided. This scale is a valid and reliable scale to measure women's satisfaction with care during the labour and postpartum period. The authorization for using the Spanish version of the COMFORTS scale was obtained (Montes et al., 2012).

On the other hand, severity of pain was measured before and after the TENS intervention. On the VAS, pain severity is marked by the participant on a scale with a range from 0 to 10 cm, in which 0 represents no pain and 10 represents the most painful situation experienced. Evaluations were completed at three different stages during the procedure: 1) at the beginning of the active phase of labour; 2) after 10 minutes; and 3) after thirty minutes. 1.3 cm. was considered the minimal clinically important difference in pain relief.

The calculation of the results applied to the satisfaction scale, consists of 40 items, each one of them can be punctuated form 1 to 5 (1 = strongly disagree and 5 =strongly agree), consequently, the maximum final value is 200 and the minimum value is 40, considering that a level above 171 would be considered a high satisfaction level (Janssen et al., 2006).In addition, the Spanish version of the COMFORTS scale is subdivided into four subscales, which have different total values: new-born care (10 to 50), postpartum nursing care (11 to 55), confidence in new-born care (13 to 65), logistics and environment (6 to 30).

To classify patients according to pain level experienced the classification system was used: VAS ratings from 0 to 3 cm were considered mild pain; from 4 to 7 cm, moderate pain; from 8 to 10 cm, severe pain. Therefore, it was evaluated if there was a relationship between severe pain and lower degree of satisfaction.

Ethical considerations

This study (ClinicalTrials.gov ID: NCT03137251, first registration on 02/05/2017) was approved by the Hospital’s Human Ethics Committee: Ethic Committee of the Hospital Complejo Hospitalario Universitario Insular Materno Infantil of Las Palmas de Gran Canaria, Canary Islands, Spain (ID: CEIm-CHUIMI-2016/875) and it followed the ethical guidelines set out in the Declaration of Helsinki. The participants were informed that they could withdraw from the study whenever they desired without negative consequences. They were also assured confidentiality for their personal information. All patients signed an informed consent statement before starting the study.

Intervention

Every patient received all the midwifery care during labour and birth according to the Hospital´s protocols. The only difference was the possibility of pain relief with a portable TENS (a Cefar rehab 2pro®).

TENS therapy was applied during the first 30 minutes of the active phase of labour. This application was longer in some cases, although pain relief was only recorded during the first thirty minutes. Two pairs of electrodes measuring 5 x 9 cm were fixed on the paravertebral regions of the participants at the T10–L1 and S2–S4 levels. The device intensity (amplitude) was individually adjusted to each participant’s

maximum sensory level. Thus, the TENS output intensity was increased during the treatment every time the patient accommodated to the TENS stimulus.

The TENS group 1 intervention consisted of a constant frequency of 100 Hz, 100 microseconds, the TENS group 2 intervention consisted of a varying high-frequency (80–100 Hz), 350-microseconds, and in the TENS group 3, participants were connected to the TENS unit but without delivering any individually adjusted electrical stimulation.

Data analysis

Statistical calculations were performed using IMB SPSS version 18.0 for Windows. The qualitative variables mediating the percentages and absolute frequencies. The quantitative variables were presented as the mean ± standard deviation (SD). Furthermore, the non-parametric Mann-Whitney U and Kruskal-Wallis tests were applied. For the analysis of repeat measurement, the statistical significance was defined as $p < .05$.

Results

Eighty patients were enrolled in this clinical trial. Seventeen participants were not allocated for randomization because of declined to participate or not meeting inclusion criteria, and 63 patients were randomly assigned (allocation ratio one to one) to one of three groups: active TENS1, active TENS2 or placebo TENS. Figure 1 shows the progression of the participants through the trial.

The mean age (standard deviation) of participants was 28.14 years old (5.53), the mean height was 163.65 centimetres (7.52), and the mean weight was 73.49 kilograms (10.61). There were 50 participants enrolled in the study from the European Union (79%), 44 were from Spain (69.8%), and 13 from non-EU countries (20.6%). Baseline participants and obstetrics characteristics are presented in Table 1.

Most women were married, 31 (49.2%). 17 (27%) were primigravidae and 11 (17.5%) multigravidas with one previous pregnancy and 3 (4.8%) with two previous pregnancies. 23 (26.5%) were living with their partner, 18 (28.6%) primigravidae, 4 (6.3%) multigravidas with one previous pregnant and 1 (1.6%) with two previous pregnancies. Finally, 9 (14.3%) were single, all of them primigravidae. All women had a companion during labour.

The total COMFORTS scale mean score was 171.03 (19.69) with an individual item mean of 4.28, with levels between 3.56 and 4.70. The mean item variance was 0.70, ranging from 0.35 to 1.29. In addition, the results were analysed by sub scales related to education, occupation and childbirth preparation (Table 2). All women enrolled in the trial completed the questionnaires received.

Regarding the level of satisfaction related to parity, nulliparous (44) had an average of 172.54 (11.7), multiparous with one previous pregnancy had an average of 170.33 (11.5), and 181.75 (14.5) for those who had more than one previous pregnancy.

Therefore, women who have had more than one delivery presented the highest level of satisfaction, followed by nulliparous and those who have had a previous pregnancy. Women with one previous pregnancy were the only group with a level of satisfaction below average.

In reference to the results obtained from each of the subscales, we obtained the following data:

Confidence in new-born care:

The mean score was 56.93 (5.4). The group with a higher satisfaction level in new-born care were women with a higher cultural level. Other groups, like a lower cultural level or those who had only completed elementary education presented a lower satisfaction level. Those with a low satisfaction level were also found not to have attended childbirth preparation course.

Therefore, according to this subscale, nulliparous had a lower average than the global group, while the rest had higher values, especially those who had only one previous pregnancy.

The satisfaction level according to accompaniment during the active phase of labour, was higher in women who were accompanied by their husband 57.79 (5.4) than those who were accompanied by other family members 54.94 (5.1).

Postpartum nursing care:

The mean score was 47.53 (4.8). Women who presented levels below average were those with a university degree, unemployed and those who did not attend birth preparation classes. 39 were accompanied by their husband and they had a mean level of satisfaction of 47.41 (4.9), 15 were accompanied by another family member with a mean of 48.86 (3.7), and 9 were accompanied by another person with a mean of 44.57(5.5).

It was observed that the highest mean level of satisfaction corresponded with accompanied women and, in this case, especially by the woman´s mother. Respect to parity, women with more than one pregnancy had higher levels of satisfaction than the rest. In addition, women with a previous pregnancy had levels below average.

New-born care:

The mean score was 42.34 (5.1). Groups who presented levels below average were those with an elementary education only and those unemployed.

Logistics and environment:

The mean score was 25.77 (2.4). Women who presented levels below average were those who had completed middle school education only, active and students, and also, those that did not attend the birth preparation classes.

Satisfaction levels in these two final subscales (new-born care and logistics and environment) in relation with parity showed that those with more than one pregnancy had higher levels of satisfaction than the rest, followed by nulliparous, while women with a previous pregnancy had levels below average.

Levels of satisfaction relating to the person attending the labour: The midwife attended 54 women during delivery, while the gynaecologist attended nine. Regarding the level of satisfaction with respect to the confidence in the new-born care sub-scale, a higher level was observed in those that were attended by the midwife, with a mean of 57.14 (5.6) compared to those who were attended by the gynaecologist, with a mean of 55.66 (4.1).

To detect weaknesses, other factors were analysed such as privacy, 8.61(0.9), provision of information, 13.6 (1.3), if the nursing time received was appropriate, 30.01 (3.4), the quality of food 8.81 (0.96), the number of professionals who attended the women 17.23 (1.7), women companion´s attend 8.71 (0.9). Satisfaction levels were high except in the perception of nursing time received, the number of professionals who attended the patient, and the provision of information. In relation to nursing time received, women with a university degree, 29.71 (7.9) and those with severe pain, 29.13 (3.8) presented levels below average. Regarding the number of professionals who attended the women, women with a university degree, 16.67 (1.9), third level students 16.71 (2.1), women with severe pain 16.91 (1.7) and those who did not attend the birth preparation classes, 16.71 (1.5) presented levels below average. Women with a university degree presented a low level of satisfaction with respect to the provision of information, 13.51 (1.3). Multiparous and nulliparous women did not present significant differences with respect to these factors.

The relationship between the level of satisfaction and pain management:

One woman (1.6%) presented mild pain, 32 (50.8%) moderate pain and 30 (47.6%) severe pain. Women who experienced severe pain had expressed a low level of satisfaction, with a mean of 168.61 (9.8). On the other hand, women with moderate pain had a high level of satisfaction, 175.51 (12.1). Regarding sub-scales, women who presented moderate pain had a higher level of satisfaction on all accounts. (Table 3). However, women with severe pain had a satisfaction level below average, except in the logistics and environment sub-scale. Regarding question number six, which refers to measures for controlling pain during labour, it showed a lower degree of satisfaction in women with severe pain, 3.03 (1.1) than women with moderate pain, 4.53 (0.7).

It should be noted that regardless of the type of pain perception, the satisfaction with the delivery room was high, 4.38 (0.7) in women with moderate pain and 4.7 (0.6) with severe pain, except for the assessment of the lighting of the room, with a lower overall average for women who presented severe pain ,3.72 (0.9).

Discussion

We found satisfactory results to pain relief during labour, partially in accordance with Smith et al. [23], because both have found good results in pain relief, but they have also measured expectations about labour pain. They found that women held realistic expectations about labour pain, but a significant number of women in labour recognize that they cannot describe the nature of labour, also multigravida. From this concept, we found that the TENS device is an ideal solution for the perception of pain variability, between different patients, and also, between the same patient during various stages. Hamlacı & Yazici [24] stated in their study that the teaching or application of non-pharmacological methods would decrease pharmacological interventions.

As in previous research [25], which identified pain as a variable affecting childbirth satisfaction, women in our study with low labour pain had higher total childbirth satisfaction than those with high labour pain. Moreover, as well as the Santana et al. study [26], we found better results in total childbirth satisfaction than in labour pain. Specifically, we found worse satisfaction results in patients who suffered from high intensity pain, who even evaluated the labour room environment badly, such us lighting. Therefore, we may conclude that even though pain is an important satisfaction factor, the rest of the factors play an important role in global satisfaction.

The COMFORTS scale does not evaluate satisfaction in connection with the mother´s expectations. Gönenç [27] also evaluate the mother´s expectations about the length of labour or about holding their babies as soon as they would have liked. Satisfaction may vary depending on when it is assessed, so we consider that the expectations should be factors that could influence the global satisfaction, but, the fact that the scale was carried out in the immediate postpartum period, could be less influential, especially with those related to pain.

There are some scales for measuring a mother´s satisfaction during labour but only two of them have been translated and validated into the Spanish Language. While enthusiasm for measuring patient satisfaction has been growing, the data collected is not always used effectively to improve service. We consider that the COMFORTS scale is a great method to improve service, because it collects data about a patient´s perception of services, the hospital facilities, and also, the treatment of the staff (doctors, nurses, midwifes, clinical assistance, cleaning staff, chefs...).

In relation to this issue, we identified that multiparous women were more satisfied that nulliparous women. The latter often have idealistic expectations because they have no previous experience to compare with. In any case, it demonstrated that women are more satisfied during labour if they are with their partner, but they prefer being with their mother after childbirth. It could be explained because during labour they prefer to go through this period and to live this experience with the father of their child, and subsequently, they need some help with childcare and so they prefer the company of the most experienced person: their mother.

According to Buglione [28], our results of satisfaction about logistics and environment, confidence, new-born care and information for patients had lower scores in lower cultural levels or economic status than those who have more advantages in this area. We saw also that women were more appreciative towards

nursery attention than doctors attention. It also reveals a problem with the hospital staff in adjusting adapted information to the patient´s cultural level. On the other hand, Khumalao [29] did not find these differences, even though they also obtained socio-demographic data similar to our own.

In totally the opposite way to our results, Khumalo & Rwakaikara [29], reported low satisfaction with overall care and dimensions of care. It could be related in part to cultural norms that dominate the medical model of maternity care and the lower status of women. Therefore, we can conclude that the reason for the differences were that our sample is not comparable with the Khumalo & Rwakaikara [29] ones, since our general results are similar to the rest of previous studies discussed.

Conclusion

Pain management through non-pharmacological measures allow high levels of satisfaction to be obtained. Thus, emphasizing the crucial role of the midwife in the improvement of maternal health.

The importance of sharing information was stressed. The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. Therefore, the importance of adapting the language to patients depending on their cultural level.

Providing a supportive environment improved the level of satisfaction. This indicator justifies how it should be introduced into the policies of each hospital for the improvement in health care.

It was shown that the approach of the midwife obtained higher levels of satisfaction in comparison to the level of attention perceived by the gynaecologist. In this way it was demonstrated how the close and continuous contact with the midwife caused an increase in the perceived satisfaction.

Declarations

Ethics approval and consent to participate

This study (ClinicalTrials.gov ID: NCT03137251, first registration on 02/05/2017) was approved by the Ethic Committee of the Hospital Complejo Hospitalario Universitario Insular Materno Infantil of Las Palmas de Gran Canaria, Canary Islands, Spain. It followed the ethical guidelines set out in the Declaration of Helsinki. The participants were informed that they could withdraw from the study whenever they desired without negative consequences. They were also assured confidentiality for their personal information. All patients signed an informed consent statement before starting the study.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analysed during this study are included in this article.

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

Study design: ABS, EMC,

Data collection: JGA, MQM

Data analysis: ABS, MQM

Study supervision: JGA, JGH, JLF

Manuscript writing: ABS, EMC, JGH, MQM

Critical revisions for important intellectual content: ABS, EMC, JGH, JLF

All authors performed data analysis in addition they read and approved the final manuscript.

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Tables

Table 1. Baseline participants and obstetrics characteristics.

Characteristic	Participants (N=63)	
	Mean	SD
Age (y)	28.3	5.3
Weight (kg)	72.9	10.9
BMI (kg/m2)	26.7	2.9
Gestational age (weeks)	39,5	1.5
Presentation	**n**	**%**
Cephalic vertex	31	49.2
Cephalic-sinciput	13	20.6
Cephalic brow	8	12.7
Cephalic face	1	1.6
Breech	10	15.9
Childbirth preparation course	**n**	**%**
Yes	39	61.9
No	24	38.1
Position adopted during labour	**n**	**%**
Sitting	7	11.1
Lateral decubitus	3	4.8
Dorsal decubitus	21	33.3
Dorsal decubitus and sitting	19	30.2
Lateral decubitus and sitting	5	7.9
Lateral and dorsal decubitus	8	12.7
Pushing methods for the second stage of labour	**n**	**%**
Valsalva pushing	34	54
Spontaneous pushing	29	46
Perineal Laceration	**n**	**%**
None	2	3.2
Grade I	53	84.1
Grade II	7	11.1

Grade III	1	1.6

BMI: Body mass index; SD: standard deviation.

Table 2. COMFORTS Subscales Scores

	n	*M*	*SD*	95% CI	*P value*	*range*
Total scale		172.61	11.9			40-200
Subscales						
Confidence in new-born care		56.93	5.4			13-65
Education					< 0.001	
Elementary school	7	59.85	3.2	[56.86, 62.85]		
Middle school	12	57.01	4.5	[54.13, 59.86]		
Professional school	9	56.77	6.8	[51.49, 62.05]		
High school	17	56.11	5.4	[53.31, 58.91]		
University degree	18	56.61	6.1	[53.55, 59.66]		
Occupation					< 0.001	
Active	44	56.56	5.6	[54.8, 58.28]		
Student	7	53.85	3.8	[50.33, 57.37]		
Unemployed	12	60.01	4.2	[57.39, 62.77]		
Childbirth preparation course					<0 .001	
Yes	39	57.33	5.3	[55.59, 59.01]		
No	24	56.29	5.7	[53.88, 58.71]		
Postpartum nursing care		47.53	4.8			11-55
Education					< 0.001	
Elementary school	7	49.28	3.8	[45.75, 52.81]		
Middle school	12	46.33	4.2	[43.61, 49.04]		
Professional school	9	47.44	6.1	[42.78, 52.11]		
High school	17	48.88	4.9	[46.33, 51.42]		
University degree	18	46.44	4.6	[44.11, 48.77]		
Occupation					< 0.001	
Active	44	47.41	4.7	[45.97, 48.84]		
Student	7	47.28	6.3	[41.44, 53.12]		
Unemployed	12	48.16	4.6	[45.21, 51.12]		
Childbirth preparation course					< .001	

Yes	39	47.97	4.7	[46.44, 49.51]		
No	24	46.83	4.9	[44.7, 48.93]		
New-born care		42.34	5.1			10-50
Education					<0.001	
Elementary school	7	37.14	6.1	[31.43, 42.85]		
Middle school	12	41.75	5.1	[38.46, 45.03]		
Professional school	9	44.11	4.2	[40.81, 47.41]		
High school	17	44.23	4.1	[42.09, 46.37]		
University degree	18	42.11	4.7	[39.76, 44.46]		
Occupation					< 0.001	
Active	44	42.56	4.6	[41.16, 43.97]		
Student	7	44.01	4.1	[40.31, 47.69]		
Unemployed	12	40.58	6.9	[36.14, 45.01]		
Childbirth preparation course					<0 .001	
Yes	39	42.31	5.5	[40.51, 44.11]		
No	24	42.41	4.4	[40.54, 44.29]		
Logistics and environment		25.77	2.4			6-30
Education					< 0.001	
Elementary school	7	25.42	2.6	[23.83, 27-01]		
Middle school	12	24.83	2.6	[23.14, 26.52]		
Professional school	9	27.01	1.2	[26.05, 27.94]		
High school	17	26.01	3.1	[24.44, 27.55]		
University degree	18	25.72	2.3	[24.55, 26.88]		
Occupation					< 0.001	
Active	44	25.52	2.5	[24.73, 26.31]		
Student	7	25.57	2.5	[23.25, 27.89]		
Unemployed	12	26.83	1.6	[25.75, 27.91]		

Childbirth preparation course					< 0.001
Yes	39	26.07	2.5	[25.25, 26.89]	
No	24	25.29	2.2	[24.32, 26.26]	

Table 3. COMFORTS Scores related to the Pain management.

	Moderate Pain (*n* =32)		**Severe Pain (*n*= 30)**			
	M	*SD*	*M*	*SD*	P value	range
Total scale	175.51	12.1	168.61	9.8	< 0.001	40-200
Subscales						
Confidence in new-born care	58.43	4.6	55.06	5.7	< 0.001	13-65
Postpartum nursing care	48.37	4.2	46.41	5.1	< 0.001	11-55
New-born care	42.71	4.8	41.7	5.3	< 0.001	10-50
Logistics and environment	25.96	2.5	25.43	2.2	< 0.001	6-30

Figures

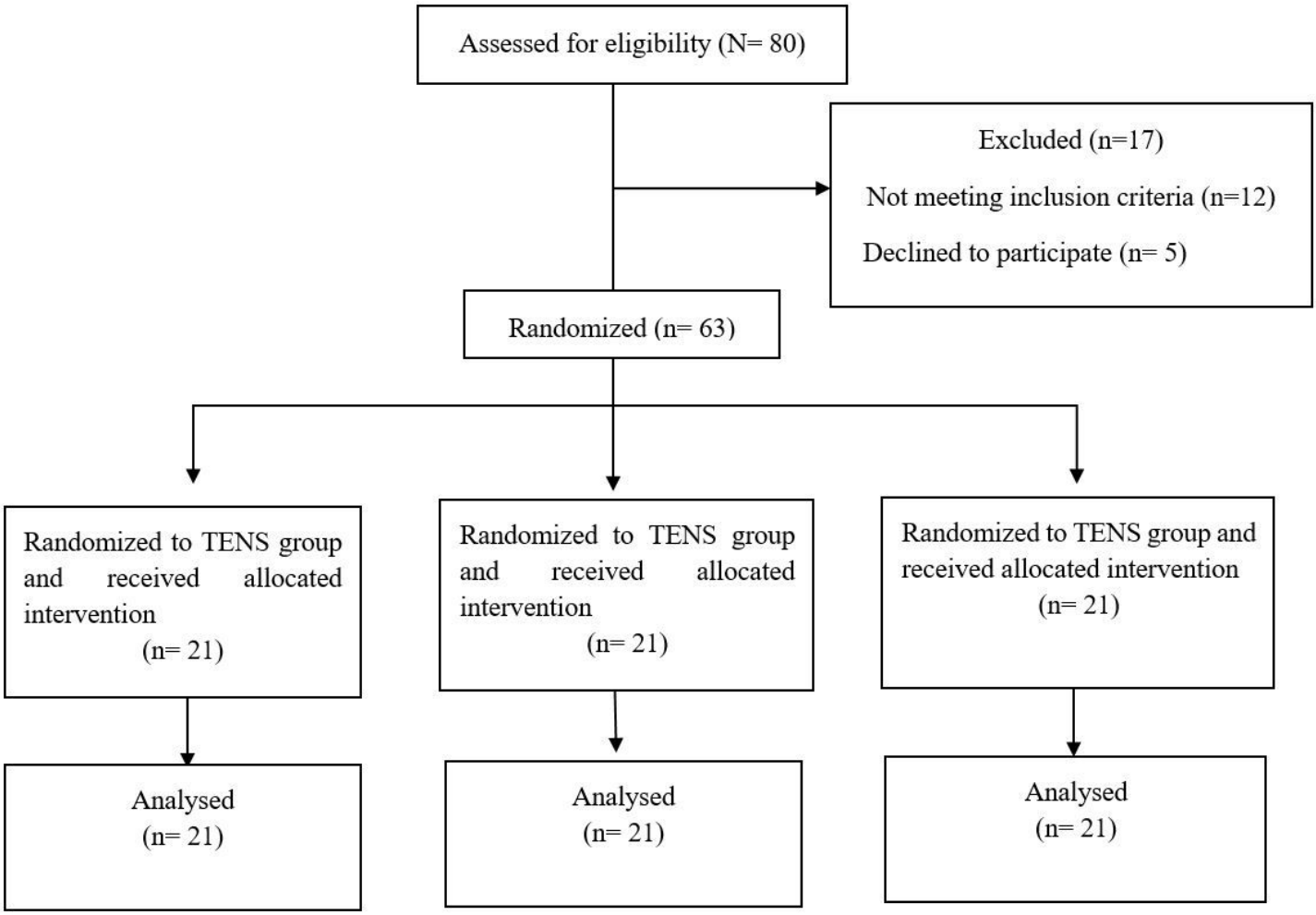

Figure 1

Flow of participants through the trial.