The Effects of Relaxation Technics on Anxiety Levels of Pregnants Who Are in Labor[*]

Gevşeme Tekniklerinin Travaydaki Gebelerin Anksiyete Düzeyleri Üzerine Etkisi

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ABSTRACT

Purpose: The research has been done experimentally with the aim of evaluating the impact of natural pain control methods, such as relaxing, changing position and breathing technics on the pain anxiety, used on mothers who give birth.

Materials and Methods: The research was designed as an experimentally study. Sixty pregnant women were studied by 30 being experiment and 30 being control groups. At the beginning of the labor (latent phase) informative knowledge form and anxiety inventory were applied to one by one conservation with the pregnant women in experiment and control groups. To the pregnant women in experiment group education on labor and breathing technics were given during the labor. Pregnant women were supported for the application of breathing, changing of position and relaxing. Anxiety inventory were applied again to pregnant women in experiment group before end of the latent phase. The pregnant women in the control group were observed in the routine of the hospital and supportive midwifery care.

Results: At the end of the research, effectiveness of the training were evaluated. Methods which applied to pregnant women to alleviate labor pain has been found to reduce levels of anxiety. It is determined that while anxiety point average was 59.37 before the natural pain control methods such as breathing technics, relaxing and changing of position are applied in order to decrease labour pain of women who has taken part in the research, anxiety point average has fallen to 35.70 after using the methods and the difference is found meaningful statistically (p<0.005).

Conclusions: According to these results, it is designated that in the event of pregnants' preparations being insufficient, the midwife who help labour, can decrease pregnants anxiety by using these natural pain control methods. It has seen that pregnants' getting information about giving birth and the staff that they get information from have impact on the anxiety levels (p>0.05).

Keywords: Anxiety and Pregnancy, Pain and Labor, Relaxation Techniques.

ÖZ

Amaç: Araştırma, travayda gebelere uygulanan ağrıyla doğal baş etme yöntemlerinden gevşeme, pozisyon değişikliği ve solunum egzersizinin ağrı anksiyetesi üzerindeki etkisini değerlendirmek amacıyla deneysel olarak yapılmıştır.

Gereç ve Yöntem: Araştırma deneysel bir çalışma olarak tasarlanmıştır. Otuz kontrol ve otuz deney olmak üzere 60 gebe ile çalışılmıştır. Doğum eyleminin başında (latent faz) deney ve kontrol her iki gruba alınan gebelerle birebir görüşülerek tanıtıcı bilgi formu ve durumluk anksiyete ölçeği uygulanmıştır. Deney grubunda yer alan gebelere doğum eylemi ve solunum teknikleri hakkında eğitim verilmiştir. Solunum ve pozisyon değişikliği yapması ve gevşemesi konusunda gebeler desteklenmiştir. Latent faz bitmeden deney grubu gebelere durumluk anksiyete ölçeği tekrar uygulanmıştır. Kontrol grubundaki gebeler doğumhanede yapılan rutin işlemler dahilindeki izleme bırakılmıştır.

Bulgular: Araştırma sonucunda verilen eğitimin etkinliği değerlendirilmiştir. Gebelere uygulanan ağrı hafifletme yöntemlerinin gebelerin durumluk kaygı düzeyini düşürdüğü saptanmıştır. Doğum ağrısını hafifletmek amacıyla solunum egzersizi, gevşeme ve pozisyon değişikliği gibi yöntemleri kapsayan girişimlerden önce gebelerin kaygı puan ortalamasının 59.37 iken, eğitim sonrası 35.70'e düştüğü belirlenmiş, aradaki fark istatistiksel olarak anlamlı bulunmuştur (p<0.005).

Sonuç: Bu yöntemlerle ebelerin, doğuma hazırlıkları yetersiz olan gebelerin travaydaki kaygılarını azaltabileceği görülmüştür. Gebelerin doğum konusunda bilgi almaları ve bilgi alınan sağlık personelinin kaygı düzeyleri üzerine etkili olduğu görülmüştür (p<0.05).

Anahtar Kelimeler: Gebelikte anksiyete, doğum ağrısı, gevşeme teknikleri

INTRODUCTION

Although childbearing is a positive experience given importance by women, it has always been a source of anxiety and fear. Labor pain, one of the most painful events women experience in their lives, should be considered from a multidimensional perspective since it is affected by a variety of factors.[1-3] In this process beginning with a physiological mechanism followed by psychological mechanisms affected by the environmental factors, one should think in a multidimensional way. Pain reducing techniques protecting the health of both the mother and the fetus should be applied effectively.

The purposes of this study are: to identify the anxiety level of laboring women, to prepare them for the delivery with the relaxation techniques, and to evaluate the effect of training on their anxiety level.

MATERIALS AND METHODS

This study is designed as an experimental one so as to identify the effect of non-pharmacological pain-reducing methods such as relaxation and breathing exercises on the state anxiety level of the laboring women. The population of the study is the pregnant women who chose Maternity and Children Hospital for delivery and 63 pregnant women matching the criteria are the participants of the study. Due to the fact that delivery of three women had to be achieved thorough caesarean section, 60 women-30 in the experimental and 30 in the control group- became the participants of the study. The questionnaire was piloted with 10 pregnant women and revised before it was conducted to the participants.

The participants were selected on the following basis:

- Voluntariness

- Having a single fetus

- Presented by vertex position

- Aged between 18 and 35

- Between 38-42 gestation weeks

- Without complications to the mother and fetus.

- Without systemic disease

- In latent phase first stage of labor (0-3cm dilatation)

- 1st or 2nd and over delivery

In order not to cause any interruptions in the treatment environment and care implications, the study was carried out during daytime when there were enough medical staff and no student implementations. This study was approved by the Ethics Committee of Cukurova University, Turkey (Number 7, 30 June 2009).

Data Collection

Data collection tools used in the study are a) data collection form which is prepared as a result of the literature review and which aims at identifying participants' history, demographic and socioeconomic features as well as their features related to pregnancy and b) State-Trait Anxiety Inventory I (STAI TX- I) developed by Spielberger et al.[4]

The questions between one and nine investigate the participants' sociodemographic features such as their age, level of education, monthly income, and health insurance. The questions between 10 and 29 aim at identifying obstetric history related to the present and previous pregnancy, features of the previous labour,

the state of receiving prenatal care, having knowledge of the relaxation methods or not, the problems during pregnancy, and the state of anxiety.

State-Trait Anxiety Inventory is a self perceived inventory consisting of short evaluations. It was developed by Spielberger et al[4] for identifying the state anxiety levels. The Turkish adaptation and standardization of the scale was employed by Oner and LeCompte[5] between 1974 and 1977 and later begun to be used in studies. State Anxiety Scale consists of 20 statements. The points obtained from the scale range from 20 to 80. High points indicate high anxiety level while low points show low anxiety level. According to the scale, points between 0 and 19 indicate "no anxiety" 20-39 points "low anxiety", 60-70 points "medium anxiety" and 80 points "severe anxiety".

Procedure

After the identification of the pregnant women meeting the criteria, the participants were informed about the purpose and the procedure of the study. Once receiving their approval, the questionnaire was conducted to the control and experimental groups.

In the first phase of the study, pregnant women who were having their first and second labour and who had 0-4 cm dilatation with contraction of 10-20 minutes' intervals were identified. Variables such as routine treatments, care implications, condition of the room, and frequency of the controls were taken into consideration so as to prevent any differences between the two groups. Equality of the experiment conditions was enhanced as much as possible. Participants in the experimental and control group were accepted on consecutive days. When they had to be treated on the same day, they were put in different labour rooms.

In order to identify the state anxiety level, participants in the experimental group were administered the State Anxiety Scale STAI TX-I following the questionnaire form. Afterwards, the women were trained on breathing techniques, how to use these techniques and how they would be affected. The exercises were conducted together so that they could be used effectively and evaluated in terms of how they should be used during contractions. Mistakes were corrected by explaining the right way. The participants were taught how to use the breathing techniques which are developed for the contractions changing according to the phases. They were taught to use these techniques appropriately in latent and active phases. The participants were also taught the efficient use of the techniques during pain, informed about what they would experience during labour and they were examined routinely.

The participants' movements were not restricted during the implementation; they were let to stay in a position they felt comfortable. They were helped when they wanted to stand or walk. When they said they had pain, they were given sacral massage. During these implementations, touching and nonverbal communication techniques were used with a view to build trust in the relationship with the participants.

In order to identify the effect of the relaxation techniques on the state anxiety, the scale was conducted again -30-40 minutes later- before at the end of the latent phase.

The control group was administered the State Anxiety Scale STAI TX-I right after the questionnaire form. Pregnant women in the control group were provided with the regular treatment and care procedures such as informing/enlightening about the labour, relaxing, informing about the movements and appropriate positions and things to do during contractions.

Data Analysis

The data were analyzed using SPSS (Statistical Programme for Social Science) software, version 20.0 Descriptive statistics, means, median, frequencies, and percentages were used to show the distribution of

the personal characteristics. Homogeneity of the groups was evaluated through Pearson Chi Square and Fisher Exact Test. In comparing the scores of scale, Paired Samples Test were used. Independent t-Test and Anova test were used to determine the relationship between the mean scores of anxiety and descriptive characteristics.

RESULTS

Demographic profile

The data were collected from 60 pregnant women 46.7 per cent of whom are 18-24 years old whereas 53.3% are 25-38. The average age of the participants is 25.65. As to the education level of the participants, 68.3 per cent of them are graduates of primary school while 31.7 per cent are graduates of high school or university. The data obtained from the questionnaire show that 76.7% of the participants are unemployed and this proportion is 5% for their husbands. The participants having health insurance constitute 88.3% whereas the percentage of those who do not have any insurance is 11.7. The average of years of marriage is 1-3 years for the 51.7% and 4-17 years for 48.3 per cent of the participants. The data about where the participants live show that 83.3% lived in the city center whereas 16.7% lived in villages.

Obstetric profile

Their obstetric history according to the experimental and control group were presented in Table 1 (Table 1). Fifty per cent of the women in the experimental group and 36.7% of the women in the control group are experiencing their first pregnancy. Fifty per cent of the experimental group and 63.3% of the control group are experiencing their second or third pregnancy.

Table 1: Obstetric profile of experimental and control groups

Characteristic	Experimental Group		Control Group	
	n	%	n	%
Pregnancy				
1 st pregnancy	15	50	11	36.7
2 nd pregnancy	11	36.7	14	46.7
3 rd pregnancy	4	13.3	5	16.6
Abortion*	5	16.7	7	23.3
Delivery				
Primipara	14	46.6	16	53.4
Multipara	16	53.4	14	46.6
Previous birth place**				
Hospital	13	92.8	14	94.4
Home	1	7.2	2	6.6
Previous pregnancy outcome**				
Delivery	13	92.8	14	94.4
Abortion	1	7.2	2	6.6
The time elapsed since last delivery **				
>2 year	3	21.4	4	25
≤ 2 year	11	78.6	12	75
Mode of last delivery **				
Vaginal birth without intervention	7	50	6	37.5
Vaginal birth with intervention	7	50	10	62.5

*n = Differentiate depending on the number of pregnancies
**n=30 Differentiate depending on the experiencing delivery

The percentages of primipara women are 46.6% for the experimental group while it is 53.4% for the control group. Forty-six per cent of the women in the experimental and control group experienced their first labour while 53.4% of them became pregnant for the second and third time. It was found that, 16.7% of the women in the experimental group and 23.3% of those in the control group experienced miscarriage during their first and second pregnancy. The percentage of women having a living child as a result of the previous pregnancy is 50%.

It was found that 92.8 % of the women in the experimental group and 94.4% of those in the experimental group ended their pregnancy in a hospital before. Ninety per cent of these pregnancies ended with delivery while 10% experienced miscarriage. The duration between two pregnancies is less than two years for the 23.3% of the participants while it is more than two years for the 76.7% of them. Of the participants who laboured before, 43. % of them stated that they had vaginal delivery without intervention whereas 56.7% experienced vaginal delivery with intervention. When all the variables were analysed, no significant difference was detected between the experimental and the control group (p>0.05).

Current Pregnancy Profile

Table 2 displays findings about receiving prenatal care, awareness of relaxation methods, and expressing how they are affected by the situation they are in (Table 2). Of all the participants, 81.6% of them stated that they had planned their pregnancy while 18.3% had not. Almost all of the women (93.3%) in the experimental and control group stated that they were examined at least once during their pregnancy. The percentage of those who were examined routinely is 42.9. As for their preferences about examination, 62.5% preferred hospitals, 25% health care centers, and 12.5% private doctors/clinics. The participants who were examined during their pregnancy stated that they were informed by the medical staff about labouring and when they were asked about the people who informed them, 57.2% stated that it was midwives/nurses, and 42.8% said it was their doctor. Of all the participants, 76.7% stated that they knew their baby's sex. Forty per cent of them were aware of the relaxation techniques to be used during labour. The percentage of participants who experienced problems during their present pregnancy was 26.7. The problems they mentioned were nausea-vomiting (56.3%), threatened abortion (43.7%), infection, and low back pain.

When the participants in the experimental and control group were asked whether they were anxious, 63.3 % said that they were. They stated that their anxiety results from fear (57.9%), pain (43.1%) and worries about their own and the baby's health as well as not knowing what to experience. When the relationship between the experimental and control group was evaluated, no significant difference was detected between the groups (p>0.05). The differences between the variables were identified using Pearson Chi Square test.

Table 2: Findings of current pregnancy

Current Pregnancy Findings	Experimental Group		Control Group		Total	
	n	%	n	%	n	%
Pregnancy planning status						
Planned	25	83.3	24	80	49	81.6
Unplanned	5	16.7	6	20	11	18.4
Prenatal controls						
Yes	28	93.3	28	93.3	56	93.3
No	2	6.7	2	6.7	4	6.7
Place of prenatal controls (n:56)						
Hospital	18	60	17	56.7	35	62.5
Health center/private asylum	7	23.3	7	23.3	14	25
Special doctor/clinic	3	17.7	4	20	7	12.5
Suitability of control frequency (n:56)						
Suitable	12	42.9	12	42.9	24	42.9
Unsuitable	16	57.1	16	57.1	32	57.1
Prenatal education by medical staff (n:56)						
Yes	17	56.7	11	36.7	28	46.7
No	13	43.3	19	63.3	32	53.3
Informed by who (n:28)						
Midwife/Nurse	13	76.4	3	27.3	16	57.2
Doctor	4	23.6	8	72.7	12	42.8
Knowledge about relaxation techniques						
Yes	16	53.3	8	26.7	24	40
No	14	46.7	22	73.3	36	60
Mentioned Problems (n:16)						
Nausea – Vomiting	6	20	3	10	9	56.3
Threatened abortion	2	6.7	3	10	5	31.3
Infection	-	-	1	3.3	1	6.2
Low back pain	-	-	1	3.3	1	6.2
Feeling anxious						
Yes	17	56.7	21	70	38	63.3
No	13	43.3	9	30	22	36.7
Reason for being anxious						
Fear	8	26.6	14	46.6	22	57.9
Pain	2	6.6	2	6.6	4	10.5
Worries about their own and the baby's health	4	13.3	4	13.3	8	21.1
Not knowing what to experience	3	10	1	3.3	4	10.5

Maternal anxiety during labour

The study investigates the relationship between the state anxiety of the women and their identifying features. The findings were analyzed using Anova variance analysis and p<0.05 was taken as the significance level. The average anxiety score for the experimental group was detected 62.27±9.04 while that of the control group was found 56.47±10.23. The average anxiety scores for the experimental and control group was 59.37±10.01 (*Table 3*). A significant relationship was expected between anxiety and education levels of the participants before and after the treatment, but the difference was not statistically significant (t=0.797 p>0.05). When the relationship between the state anxiety level and the number of previous pregnancies was analysed, no significant difference was detected (F=0.562 p>0.05).

Table 3: The average anxiety scores for the experimental and the control group before treatment

Groups	n	X̄ ± SD	Min.- Max.
Experimental	30	62.27 ± 9.04	43-76
Control	30	56.47 ± 10.23	40-75
Total	60	59.37 ± 10.01	40-76

Table 4 displays findings related to the relationship between the state anxiety level and being informed by medical staff. Results show that 53.3% of the participants were not informed sufficiently about labour and delivery. Of the participants who stated that they were informed, 57.2% stated they were informed by midwives/nurses while 42.8% of them by doctors. The average anxiety scores of those informed by midwives/nurses were found 59.62 before treatment and 33.23 after treatment. The average anxiety scores of those informed by the doctors were 62.75 before treatment and 41.25 after treatment (*Table 4*). The decrease in the anxiety scores of the participants informed by midwives/nurses was statistically significant (F= 8.702 p=0.010). While no significant difference was detected in the experimental group in terms of the relationship between being informed and the level of anxiety (p>0.05), the difference was found to be significant for the control group (p=0.043). A significant decrease in the anxiety levels was detected for those who stated to have been informed by the midwives/nurses (p=0.010).

Table 4: Findings related to the relationship between the state anxiety level and being informed by medical staff

Being informed by medical staff	n	Before X̄	After X̄	Min.-Max.	t	p
Midwife/nurse	13	59.62	33.23	29-39		
Doctor	4	62.75	41.25	36-52	-2.950	0.010
Total	17	60.35	35.12	29-52		

Findings about the state anxiety level of the participants in the experimental group were displayed in Table 5. Their scores before and after treatment were found to be significant (p<0.05), which indicates the effect of the treatment (*Table 5*). Having the knowledge of the relaxation techniques helped the participants in the experimental group to lower their anxiety levels; the average score was 61.94 before the treatment whereas it was 33.31 after the treatment. The state anxiety level was found to be statistically significant before and after the treatment (p=0.04).

Table 5: Findings about the state anxiety level of the participants in the experimental group

Treatment	n	$\bar{X} \pm SD$	Min-Max	p
Before	30	62.27 ± 9.04	40-76	0.000
After	30	35.70 ± 5.11	29-52	

DISCUSSION

Methods aiming to reduce the pain during labour have changed and improved throughout the history. There are increasing numbers of researches on the effects of pharmacological and non-pharmacological approaches. Identifying the positive and negative effects of these methods requires a wide knowledge of

the literature. It will be beneficial to have a multidisciplinary approach of the issue. Above all, the support of those working actively in the labour room has a prominent role. Gibbins and Thomson[6] points out that women supported especially by their husbands better control themselves.

The effects of improving supplementary and alternative methods have not been proved completely yet. Field[7] states that standardization of the non-pharmacological methods can be achieved through the identification of the implementation type, and as a result of the empirical studies. Allaire[8], Gentz[9], Smith et al[10], and Tournaire & Theau-Yonneau[11] mention the effectiveness of the methods in their studies. Existing studies have shown that methods are not very effective alone and it is more influential to use various methods together.

The average age of the participants is 25.65. The ages of the participants in the experimental and control groups were found to be similar (X^2=5.786 p>0.05). Despite the fact that the related literature mentions the age of the participants as a determining factor in the perception of pain, this study has not found any significant relationship between the age of the participants and their anxiety level. While the results of the study do not show similarity with those of Chang, Wang and Chen's[12], it is correlated with Ozturk's[13] study.

When the anxiety level of the participants was evaluated before and after treatment, no significant difference was detected in the relationship between the level of education and anxiety (p>0.05). According to Hackfort and Spielberger[14] people with high education levels can develop betters' skills to cope with stress.

The duration between two pregnancies was found to be less than two years for the 18.4% of the participants while it was more than two years for the 81.6% of them (Table 1). Turkey Demographic and Health Survey 2013 (TDHS) data show that average of the duration between two pregnancies is 3.7 years (45 months) and the percentage of those who got pregnant before two years is 24%. [15]

Findings show that 11.7% of the participants did not have any health insurance. Ozer[16] found that there was a relationship between having a health insurance and the anxiety level as 46% of the participants in the study did not have any health insurance. The same fact was taken into account in this study as well, but no statistically significant difference was detected (p>0.05). In this respect, this study does not show similarity with Ozer's[16] study.

Keles[17] found a significant relationship between personality and anxiety in unwanted pregnancies. Findings of this study show that 81.7% of the participants planned their pregnancy (Table 3). No significant relationship was detected between the anxiety level and unplanned pregnancy. This finding correlates with Ozer's[16] study. Results show that 53.3% of the participants were not informed sufficiently about labour and delivery. The decrease in the anxiety level scores of participants informed by midwives/nurses was statistically significant (F= 8.702 p=0.010). Ozer[16] evaluated the relationship between the anxiety level and the medical staff informing women and found that the decrease in the anxiety level was more significant for those informed by doctors. This finding does not correlate with our study.

The percentage of the participants who experienced miscarriage before was 16.7, and no significant relationship was detected between the anxiety level and experiencing miscarriage (Table 2). Ozer's[16] findings correlate with our study in that no significant difference was detected between the miscarriage experience and the anxiety level. However, our findings do not show similarity with Genez's[18] study which found that the anxiety level of the pregnant women who experienced miscarriage before were higher than who did not.

The relaxation and breathing exercises aimed to reduce labour pain and the level of anxiety, and the average of the anxiety scores was analyzed before and after the treatment. The difference between the scores was found statistically significant (p<0.05), which indicates the effect of the treatment. It can thus be concluded that natural pain reducing methods reduce anxiety and have effects on the relief during labour. These results correlate with Ozturk's[13], Ozer's[16], Yildirim's[19] and findings indicating the effect of non-pharmacological pain reducing methods on the level of anxiety and pain. Albers[20] found that especially women who are multipara and who are 30 years old and over more frequently preferred non-pharmacological methods.

 It is considered that the implementation of these helpful natural methods by medical staff would be effective in reducing the anxiety level of the labouring women. This kind of a relationship enhancing trust on the support person could enable labouring women to participate in the implementations actively, to live positive experiences, and to shorten the duration of the delivery. Asti and Yildiz[21] found that the support of the nurses to the labouring women reduced their anxiety level. Yildirim[19] states that midwives/nurses participating in the labour should be aware of the effects and limitations of the pharmacological and non-pharmacological methods and support the mother while using these methods. The fact that women in the experimental group received supportive midwifery care helped them more actively participate in the pain reducing methods. Cheung et al.[22] and Ramnero et al.[23] state that a midwife is one of the people who can affect the performance of the labour and delivery.

Thinking that it could be related with their level of anxiety, the participants of the study were asked to express their feelings when they felt anxious. Of all the participants, 63.3% stated that they were anxious. They stated that their anxiety resulted from fear (57.7%), and other things such as pain and worries about their own and the baby's health and not knowing what to experience. This finding indicates that being anxious or not can change with pain and anxiety. After the treatment, no significant relationship was detected between the means of anxiety scores and the state of being anxious (p>0.05). The results of the study correlate with Yildirim's[19] study which indicates that level of anxiety is not related with the level of anxiety and pain and that there can be some changes in the process.

As long as there are no constrains for the pregnant women, their movements should not be restricted, which eventually can help them find a comfortable position and relax. Pregnant women in the experimental and control group were supported about this issue during the process. Yildirim[19] points out that removing any restrictions has effects on the relaxation and staying calmer. The results obtained from the study correlate with these findings.

CONCLUSION

Pregnancy is an important life experience for women. Ending this process in an ideal way is prominent both for the mother and for the family. This study has found that preparing women for the labour and delivery using relaxation techniques and training them about the things they will experience during labour have effects on their anxiety level. To help pregnant women overcome their worries resulting from the pain of labour, it will be helpful to train them on the pain management methods during pregnancy. Besides, using non-pharmacological pain reducing methods empirically proven to be effective will reduce the need for pharmacological agents. Hence, negative side effects that may result from these agents will not be a risk factor anymore.

ACKNOWLEDGMENTS

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