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The Effect of CAM Methods Plan to Apply by Pregnant Women in Order to Cope with Birth Pain on Fear of Childbirth and Childbirth Self-Efficacy

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Abstract
Objective: In the study, it was aimed to determine the effect of CAM methods planned to be used by pregnant women in order to cope with birth pain on fear of childbirth and childbirth self-efficacy
Material-Method: The cross-sectional study was completed with 455 pregnant women. The study data were collected through Identifying Information Form, which also aimed to determine CAM methods planned to be used, The Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) Version A, and Childbirth Self-Efficacy Inventory (CBSEI).
Results: In the study, it was determined that the pregnant women planned to use mind-body based CAM methods by 31.4%, manipulative and body-based methods by 25, biologically based methods by 1.1%, energy therapy methods by 0.9%, and alternative medicine methods by 0.7%. In addition, it was determined that there was a significant difference between CBSEI efficacy and outcome expectancy subscales mean scores and CBSEI total scale mean score of the pregnant women who did not plan to apply CAM methods to reduce their labor pain compared to those who planned to use these methods.
Conclusion: It was found in the study that the pregnant women planned to use mind-body based methods the most in order to cope with labor pain in childbirth. It was also determined that there was no significant difference between the groups in terms of fear of childbirth according to their planning to use CAM methods to cope with labor pain in childbirth, and that childbirth self-efficacy levels of those who planned to use CAM methods were significantly low.
Keywords: Traditional Medicine, Pregnancy, Fear of Childbirth, Self-Efficacy.

INTRODUCTION

While alternative methods in health include methods used instead of independent or modern medical methods, complementary medicine involves methods which are applied together with modern medical therapy and complement medical therapy. Application of both methods together is named as Complementary and Alternative Medicine (CAM). The rate of women using these methods especially in pregnancy and childbirth is quite high.[1] When the rate of CAM use in developed countries is considered, it is seen that these rates are 35.5% in Austria, 39.5% in Germany, 28.8% in Norway, 39.9% in Switzerland, and 31.5% in Sweden.[2] Although it is known that CAM is used in certain diseases in Türkiye, no data are available regarding its use in pregnancy and childbirth.[3] It is used at high rates in obstetrics clinics in pregnancy and childbirth in the USA, England, Germany, and Australia.[4, 5]

With regard to their childbirth, pregnant women are afraid of experiencing severe fear during labor, long duration of labor, not being able to push their baby, not using breathing techniques accurately, and losing their control in labor.[6-8] It is well-documented that fear of childbirth negatively affects pregnancy process and leads to stress in pregnancy.[9] Complementary and alternative methods (relaxation techniques, mental imagery/mental stimulation, sensual stimulation techniques, breathing techniques) preferred at birth have effects on labor pain.[10] Providing the pregnant woman with information about childbirth and psycho-socio-cultural support positively affects the pregnant woman's physical processes, attitude towards childbirth, and childbirth self-efficacy.[11] Childbirth self-efficacy of the pregnant woman shapes her belief and expectations related to childbirth.[12] Nonpharmacological methods

can enable the pregnant woman to use her own power in childbirth, cope with the childbirth process, and strengthen her communication with her baby.[13] The reasons for insufficient data about the use of CAM in Türkiye are that patients hide their use of CAM from healthcare professionals, CAM use is not the responsibility of healthcare professionals and they do not have adequate information about it, and healthcare professional do not approve of its use.[14]

Hence, identifying CAM methods that pregnant women in Türkiye plan to use and determining the effects of these methods on childbirth can be important in terms of getting healthcare professionals to consider CAM use and raising their awareness of CAM methods. This is because supporting pregnant women in the pregnancy process is vitally important for their psychosocial well-being and childbirth preparation. Therefore, in this study, it was aimed to determine the effect of CAM methods that pregnant women planned to use in cope with birth pain on fear of childbirth and childbirth self-efficacy.

Research questions:

(1) What is the rate of CAM methods that pregnant women plan to apply in order to cope with labor pain in childbirth?

(2) What are CAM types and rates that pregnant women plan to apply in order to cope with labor pain in childbirth?

(3) Are there any differences between the mean scores of WDEQ A, CBSEI total and sub-dimensions according to the CAM methods that pregnant women plan to apply in cope with birth pain?

MATERIALS AND METHODS

Study design, setting and study participants

This cross-sectional study was conducted in 4 Family Health Centers (FHCs) with the highest patient population located in the center of a province in the east of Türkiye between April – August 2022. The population of the study consisted of 551 pregnant women registered to the relevant FHCs on these dates. All pregnant women were reached by telephone. The study sample was composed of pregnant women who met the inclusion criteria (having no communication problem, planning to give normal birth, having a healthy fetus, being in the gestational week of 28-40, being older than 18 years, and having no risk related to pregnancy diabetes, preeclampsia, chronic diseases, and any diagnosed psychiatric disorder, etc.). and who agreed to participate in the study. Since the number of pregnant women was low, sampling was not used. Pregnant women who had a risky pregnancy according to medical records, had a risky fetus, and had a psychiatric disorder were excluded from the study. The study was completed with 455 pregnant women.

Data collection

The study data were collected through face-to-face interviews held in pregnancy rooms in FHCs. Data collection process lasted approximately 20 minutes. Pregnant women were informed about the study, their inclusion and exclusion criteria were evaluated, and they were invited to participate in the study. The purpose of the study was explained to the pregnant women who agreed to participate in the study, and they were assured that their confidentiality would be respected. 44 of the pregnant women who were accessed did not want to participate in the study due to time constraints, and 32 were excluded from the study due to not meeting the inclusion criteria. Eventually, the study was completed with 455 pregnant women. The data were evaluated by dividing the pregnant women into two groups as those who planned to use CAM methods and those who did not.

Data collection tools

Identifying information form

The form developed by the researchers in order to determine individual characteristics of the pregnant women consisted of 11 questions. Questions 1 to 5 inquired about certain sociodemographic characteristics of the women (age, education level, income status, employment status, and place of residence), questions 6 to 10 sought information about certain obstetric characteristics and knowledge about experiencing pain in childbirth (number of pregnancies, miscarriage status, status or receiving information about childbirth, the source of knowledge, and belief related to experiencing pain in childbirth). Question 11 included items related to CAM methods the women planned to use in childbirth (music, yoga, prayer, dreaming, acupressure, acupuncture, aromatherapy, ayurveda, plant use, bioenergy, hydrotherapy/thermal spring, hypnosis, homeopathy, massage, meditation, ozone therapy, special diets, reflexology, reiki, painting/music/art/dance therapy, therapeutic touch, vitamins, pain relieving drug). CAM method types in question 11 were grouped under 5 categories by performing a literature review (mind-body therapy, alternative medicine methods, biologically-based therapies, manipulative and body-based therapy, energy therapy), and evaluations were made accordingly.[15]

The Wijma delivery expectancy / experience questionnaire version A (W-DEQ A)

In this study, the Turkish version of the scale[16] was

used, which was developed by Wijma et al.[17] The questionnaire was used in order to determine the level of fear of childbirth the pregnant women experienced. The scale consists of 33 items. The 6-point Likert type scale is scored between 0 and 5. The negative statements on the scale (2, 3, 6, 7, 8, 11, 12, 15, 19, 20, 24, 25, 27, 31) are reversely scored. The minimum score is 0, and the maximum score is 165. A high total scale score shows a high level of fear. The Cronbach's alpha coefficient of the scale was found as 0.88 for primiparous pregnant women and as 0.90 for multiparous pregnant women.[16] In the present study, the Cronbach's alpha coefficient of the scale was determined to be 0.84.

Childbirth self-efficacy inventory (CBSEI)

The Turkish validity and reliability of the scale developed by Ip, Chung & Tang was done by Ersoy.[18-19] The Turkish version of the scale, which measures women's self-confidence regarding childbirth and their cope skills, was used in the study. The scale has two subscales, which are outcome and efficacy expectancy. Each subscale of the scale has 16 questions. The minimum and maximum scores to be obtained from the subscales are 16 and 160, respectively. A high point obtained from the subscales shows a high efficacy and outcome expectancy in pregnant women related to childbirth. In the Likert type scale, items are scored from 1 to 10. In the outcome expectancy subscale 1 corresponds to "not useful at all" and 10 expresses "very useful". As for efficacy expectancy subscale, the first 13 questions are responded as 1 "totally sure" and 10 "not sure at all", while questions from 14 to 16 are responded as 1 "not sure at all" and 10 "totally sure." The questions between 1 and 13 in the efficacy expectancy subscale are reversely scored. The lowest and highest scores to be obtained from the scale ranges from 32 to 320. High scores to be obtained from the scale indicate high efficacy levels of pregnant women in childbirth. The Cronbach's alpha coefficient of the scale was found to be 0.90.[18] In the present study, this value was determined as 0.82.

Data analysis

Statistical analyses of the study data were performed by using SPSS 25.0 (Statistical Package for the Social Sciences) software. Compliance of the data with normal distribution was examined with Kolmogorov-Smirnov test. The percentages and distribution of identifying characteristics were expressed as "frequencies". In the comparison between the identifying characteristics of those who planned to use CAM methods and those who did not, Chi-square test was used for categorical variables. The categorical variable that caused the difference between the columns in the categorical data was determined with Bonferroni method. In the comparison of the participants' W-DEQ A, CBSEI Total scale and subscale mean scores with their status of planning to use CAM to cope with labor pain in childbirth, Mann-Whitney U test was employed. The results were evaluated at the significance level of $p<0.05$.

Ethical considerations

The study was conducted in compliance with the principles of the Helsinki Declaration. Ethical approval for the study was obtained from Inonu University Health Sciences Scientific Research and Publication Ethics Committee (Decision no: 2021/2648). The pregnant women who presented to the FHCs were explained that participation in the study was on a voluntary basis, that they could quit the study whenever they wished, and they were informed about the purpose and duration of the study and invited to participate in the study. Verbal consent was taken from those who agreed to participate and met the inclusion criteria. Official written permission was taken from the Provincial Health Directorate to which the institutions where the study was conducted were affiliated (Issue: E-72527474-771).

RESULTS

The comparison of certain identifying characteristics of the pregnant women according to their status of planning to use CAM methods to cope with labor pain in childbirth is presented in Table 1. Accordingly, it was determined that the women who planned to use CAM to cope with labor pain in childbirth and those who did not were similar in terms of their education level, employment status, and place of residence, and that there was no statistically significant difference between the groups ($p>0.05$). It was also found that the groups were different in terms of number of pregnancies, miscarriage status, receiving information about childbirth, the source of information, and expecting to experience pain in childbirth, and that the difference between the groups was statistically significant ($p<0.05$). The differences between the columns were determined to be between those with one pregnancy and the others, those who received information related to childbirth from a midwife and the others, and those who expected to experience pain in childbirth and the others. The mean age of the pregnant women participating in the study was 28.037±5.20.

The CAM methods that the pregnant women planned to use in order to cope with labor pain in childbirth

are presented in Table 2. Accordingly, it was determined that 31.4% of the pregnant women planned to use mind-body therapy, 2% manipulative and body-based therapy, 1.1% biologically based therapy, 0.9% energy therapy, and 0.7% alternative medicine methods.

In Figure 1, the types and frequencies of CAM methods the pregnant women planned to use in order to cope with labor pain in childbirth are given. Accordingly, it was determined that the pregnant women planned to use prayer the most (n=88), followed by listening to music (n=27), yoga (n=11), breathing exercise (n=10), massage (n=8), dreaming (n=6), vitamins (n=3), ozone therapy (n=2), reiki (n=2), therapeutic touch (n=2), acupuncture (n=1), plant use (n=1), hydrotherapy (n=1), special diets (n=1), walking (n=1), and swimming (n=1).

The comparison of the pregnant women's W-DEQ A, CBSEI total scale and subscale scores according to their status of planning to use CAM in reducing their pain in childbirth is presented in Table 3. CBSEI efficacy and outcome expectancy subscale and CBSEI total scale mean score of the pregnant women who planned to use CAM for reducing their pain in childbirth were determined to be statistically significantly different compared to those who did not plan to use CAM ($p<0.05$). No statistically significant difference was found between W-DEQ A total scale mean scores of the pregnant women who planned to use CAM in reducing their pain in childbirth and those who did not ($p>0.05$).

Table 1. Distribution of the pregnant women according to their descriptive characteristics

Characteristics	**Those who did not plan to use CAM (n=290; %63.7)**		**Those who planned to use CAM (n=165; %36.3)**		
	n	**%**	**n**	**%**	**Test and p value**
Education level					
High school and below	197	67.9	120	72.7	X^2=1.145
University and above	93	32.1	45	27.3	p=0.285
Employment status					
Employed	44	15.2	24	14.5	X^2=1.369
Unemployed	246	84.8	141	85.5	p=0.504
Income status					
Low	72	24.8	45	27.3	X^2=2.048
Medium	194	66.9	110	66.7	p=0.727
High	24	8.3	10	6.1	
Place of residence					
Village/town/district	96	33.1	55	33.3	X^2=0.003
Province	194	66.9	110	66.7	p=0.960
Gestation					
1	108[a]	37.2	36[a]	21.8	X^2=12.330
2	73[b]	25.2	58[b]	35.2	**p=0.002**
3 and above	109[b]	37.6	71[b]	43.0	
Miscarriage history					
Yes	57	19.7	52	31.5	X^2=8.120
No	233	80.3	113	68.5	**p=0.004**
Receiving information about childbirth					
Yes	167	57.6	123	74.5	X^2=13.087
No	123	42.4	42	25.5	**p=0.000**
Source of information					
Midwife	52 [a]	17.9	62 [a]	37.6	
Doctor	100 [b]	34.5	43 [b]	26.1	X^2=21.615
Internet	138 [b]	47.6	60 [b]	36.4	**p=0.000**
Expecting to experience pain in childbirth					
Strongly agree	131 [a]	45.2	40 [b]	24.2	
Agree	121 [b]	41.7	75 [a]	45.5	X^2=31.729
Undecided	33 [c]	11.4	46 [c]	27.9	**p=0.000**
Disagree	4 [a,b,c]	1.4	4 [a,b,c]	2.4	
Strongly disagree	1 [a,b,c]	0.3	0 [a,b,c]	0	
Age	**Mean:±SD** 28.037±5.20				

Each subscript letter denotes a subset of categories whose column proportions do not differ significantly from each other at the 0.05 level.

Table 2. Distribution of CAM methods planned to be used by the pregnant women

Variables	Frequency (n)	Percentages (%)
Mind-body therapy	143	31.4
Alternative medicine methods	3	0.7
Biologically based therapy	5	1.1
Manipulative and body-based therapy	10	2.2
Energy Therapy	4	0.9
Total	165	36.3

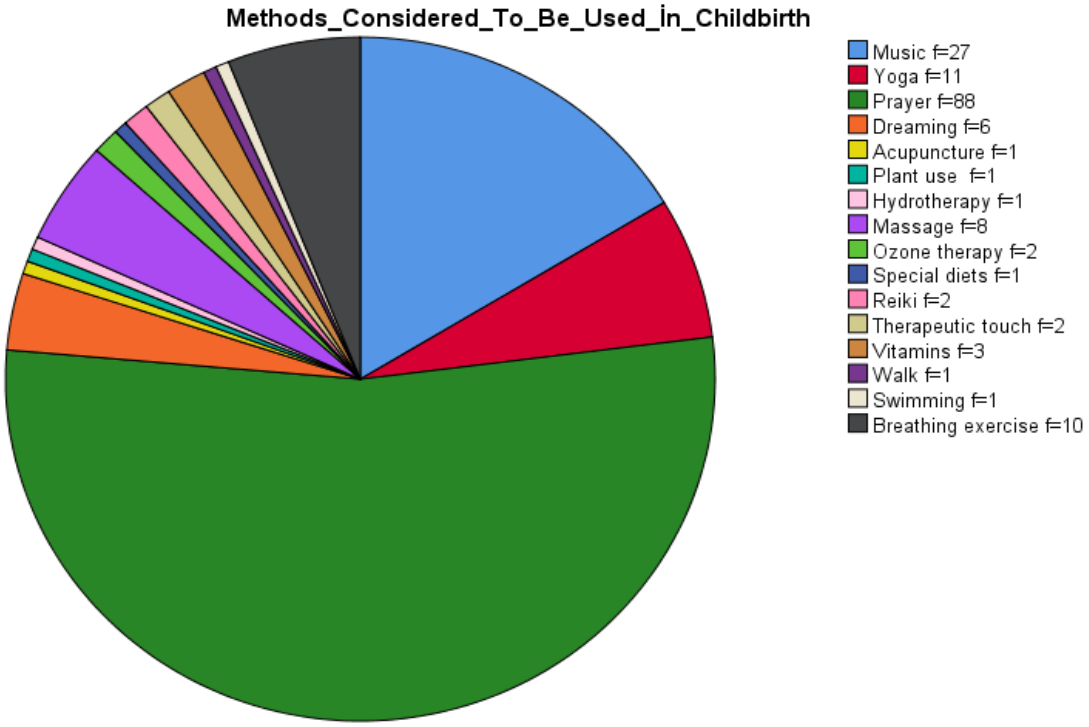

Figure 1. Types and frequencies of CAM methods that pregnant women planned to use in order to cope with labor pain in childbirth

Table 3. Comparison of the pregnant women's W-DEQ A, CBSEI total scale and subscale mean scores with respect to those who planned to use and did not plan to use CAM methods in childbirth

Characteristics	W-DEQ A	Efficacy Expectancy	Outcome Expectancy	CBSEI Total
	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Those who did not plan to use CAM (n=290)	65.71±19.22	80.16.±19.29	126.32±21.95	206.48±29.02
Those who planned to use CAM (n=165)	67.86±19.41	74.59±16.45	119.38±22.98	193.98±28.03
Test and p value	U=22568.500 p=0.314	U=19201.000 **p=0.000**	U=19085.50 **p=0.000**	U=16860.00 **p=0.000**

U: Mann-Whitney U Test; SD: Standard Deviation

DISCUSSION

In the present study, in which it was aimed to determine the relationship between CAM methods that the pregnant women planned to use in order to cope with labor pain in childbirth and their fear of birth and childbirth self-efficacy, it was determined that 36.3% of the participating women planned to use CAM methods to reduce their labor pain. In Türkiye, there is no study conducted to determine CAM methods which pregnant women planned to use in order to reduce their labor pain. The studies conducted in the national literature are generally on the use of CAM methods in women's health, the use of CAM in infertility, and the use of CAM in the postpartum period.[20-22] The studies on CAM use in pregnancy were mostly conducted to determine CAM types used related to complaints experienced in pregnancy, and these studies are usually compilation studies.[23-25] In two studies conducted in the west of Türkiye in order to determine CAM use in pregnancy-related complaints, the rates of women using CAM methods were found to be 41.1% and 47.3%.[26, 27] These rates were found to be 69% in Russia, 43.8% in Australia, and 49.8 in Poland.[28] It is known that CAM usage rates are high in developed countries, while they are lower in developing countries. Considering that the present study was conducted in the west of Türkiye, it can be claimed that the results support the study results in the literature.

In the present study, the CAM method that the pregnant women planned to use in order to reduce their labor pain the most was determined to be mind-body based methods. Among the mind-body based methods, the most preferred ones were prayer, music, and yoga. While no study was encountered in Türkiye which investigated pregnancy and prayer in childbirth, there are many compilation studies and randomized controlled trials on CAM methods such as music, yoga, acupressure, acupuncture, and massage.[29-34]

In a thesis study in which the use of complementary and alternative health approaches were evaluated in 199 pregnant women, the CAM methods that were used the most in pregnancy were found to be plant use (82.3%), prayer (81.4%), and massage (45.1%).[35] In the present study, it was found that the CAM methods which the pregnant women planned to use the least were manipulative body based methods (massage, reflexology, hydrotherapy, acupressure), biologically based methods (plant use, special diets, vitamins), energy therapy (reiki), and alternative medicine methods (acupuncture, ozone therapy). In a study conducted, it was reported that the majority of healthcare professionals (81.3%), who could inform the pregnant woman in terms of CAM use, had received no information about CAM.[36] When CAM usage preference of the pregnant women in the present study is examined, it is seen that they mostly preferred the methods which do not require interaction or active training and which are easily accessible. It is thought that the differences between the studies stemmed from the fact that pregnant women have little knowledge about these methods, and that the number of health professionals competent in CAM is low. In addition, the legal restriction imposed on the use of CAM by midwives and nurses may have contributed to this difference.[14]

In the present study, it was determined that childbirth self-efficacy levels of those who did not plan to use CAM methods were significantly high, that their fear of childbirth was lower compared to those who planned to use CAM methods, but that the difference between them was not significant. It is expected for individuals with high levels of childbirth self-efficacy to have lower levels of fear of childbirth.[12, 37] In the present study, the finding that self-efficacy levels of those who did not plan to use CAM methods were high despite their low levels of fear of childbirth is thought to be a result of their existing self-confidence. This result is consistent with the literature. In the national and international literature, there are no studies conducted on the relationship between CAM methods that pregnant women plan to use in order to cope with labor pain in childbirth and fear of childbirth and childbirth self-efficacy. Studies conducted are mostly pretest-posttest application studies which were conducted in order to reduce labor pain.[38-41] In these studies, CAM methods were directly applied to the experimental groups by CAM experts. Koyuncu et al.[40] applied yoga to pregnant women in trimester, and they reported that yoga application increased the pregnant women's childbirth self-efficacy and decreased fear of childbirth. In the systematic compilation study by Stoll et al.[42] it was reported that yoga decreased pregnant women's worries about childbirth. Health professionals who are responsible for the follow-up of healthy pregnant women in Türkiye are midwives and nurses working at primary care health institutions. The knowledge level of midwives and nurses about CAM methods in Türkiye is quite low.[14] The cause of this difference can be explained in two ways. Firstly, it could be that pregnant women do not have adequate information about the effects of CAM methods. Secondly, this may have resulted from the

very low number of the pregnant women who planned to use CAM methods other than mind-body based methods. This is because there is no clear information about the effects of the methods.

CONCLUSION

In conclusion, it was determined in the study that the CAM methods which the pregnant women planned to use the most in order to cope with labor pain in childbirth were mind-body based methods, and that among these methods, they preferred prayer method the most. It was also found that there was no difference between the groups in terms of their fear of childbirth according to their status of planning to use CAM methods in order to reduce their labor pain, and that childbirth self-efficacy levels of those who planned to use CAM methods were significantly low. Considering the results of the study, it is seen that the pregnant women did not plan to use certain CAM methods. Hence, it is recommended to conduct studies that will ensure that pregnant women receive training on CAM methods that they can use in childbirth and their effects. Secondly, it is recommended to conduct studies with larger samples, to evaluate the status of pregnant women in terms of receiving training on CAM methods and their current knowledge levels, and to determine how and where they would like to get information on the issue. Thirdly, it would be useful to conduct studies that will determine the effects of CAM methods on childbirth self-efficacy and fear of childbirth. Finally, training on the effects of CAM methods can be included in the education of midwives and nurses.

Limitations of the Study

The study has certain limitations. First of all, questionnaire method was used in collecting the data. The reports of the pregnant women were limited to the items in the questionnaire. While clear responses to the questionnaire items were obtained, this situation limited our ability to obtain the pregnant women's other opinions on the issue. Another limitation is that the sample size was small in terms of certain variables (CAM methods and types). Finally, as the study was conducted in only 4 family health centers in a province in the east of Türkiye, the results cannot be generalized to the whole region and the country.

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