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# EFFECT OF CHILDBIRTH PREPARATION CLASSES ON WOMEN'S KNOWLEDGE, SELF-EFFICACY AND SATISFACTION TO COPE WITH LABOUR PAIN

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## ABSTRACT

***Background**: Improving knowledge of pregnant women about labour pain and coping strategies are important in increasing self-efficacy and satisfaction of women during labour. **Aim**: of the current research was to evaluate the effect of childbirth preparation classes on women's knowledge, self- efficacy and satisfaction to cope with labour pain. **Design:** A quasi-experimental research design was adopted to fulfil the aim of this research. **Setting:** The research was conducted at obstetrics & gynaecological outpatient clinic in Benha university hospital from the beginning of June, 2021 to the end of November, 2021 covering six months. **Sample:** A purposive sample of seventy pregnant women with randomly division into two groups (control group= 35 women who received only routine hospital care and study group= 35 women who received the childbirth preparation classes in addition to routine hospital care **Tools**: Data were collected through five main tools: A Structured interviewing questionnaire, maternal knowledge questionnaire, childbirth self-efficacy inventory, numerical rating scale, and women's satisfaction sheet. **Results**: showed that nearly three quarters(77.1% – 74.3%) of studied women in the study group had good knowledge at post and follow up stages respectively compared to nearly one quarter (28.6%) of control group. Additionally there was no statistically significant difference regarding all knowledge items, total knowledge and total self- efficacy between the study and the control group before childbirth preparation classes. However, a highly statistically significant difference (p-values < 0.001) was observed after implementation (post-test) and 24- 48hours after delivery (follow up). Additionally (62.9%, 71.1%) of studied women in the study group were satisfied compared to only (20%, 28.6%) of studied women in the control group at post-implementation stage and follow-up stage respectively. Also women in the study group had significantly lower level of pain score than women in the control group with statistically significant difference and there was a negative highly statistically significant correlation between total pain score and total satisfaction among both study and control group at follow-up stage. **Conclusion:** the study concluded that research hypotheses were supported and the childbirth*

*preparation classes had a positive effect on improvement of pregnant women's knowledge and in turn self-efficacy were also increased in study group compared to control group. Also the majority of women in the study group were satisfied with childbirth preparation classes.* ***Recommendations:*** *Outpatient clinics should be provided with posters and pamphlets regarding simple methods for dealing with labour pain to increase self-efficacy of pregnant women.*

**Key words:** Childbirth Preparation Classes, knowledge, Self- Efficacy, Satisfaction, coping strategies, labour pain.

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## 1. INTRODUCTION

Childbirth is a unique experience of a women's life as it is an important event accompanied with physical, psychological, emotional, social, and cultural changes. Therefore, empowering pregnant women to adapt to these changes and seek to give birth in a supportive ,pleasant, respectful environment with the staff know how to respond accordingly is necessary (Pinar et al., 2018) [1]. Although childbirth is a natural process, it can be accompanied by fear, anxiety and pain. Pregnant women need reinforcement in self-efficacy to give birth naturally) (Korn et al., 2021) [2].

Women's fear of childbirth has been found to be directly related to fear of pain, lowering mother's ability to give natural childbirth this leading to use of medical interventions as painkillers, instrumental births and also, traumatized birth experience. Improving pregnant women's knowledge regarding birth process through involving in childbirth classes can help on reducing anxiety and fear about childbirth experience (Campbell and Nolanm, 2018). [3].

Childbirth preparation classes are courses that teaches pregnant women to use breathing and concentration and exercise techniques to use during labor which in turn plays an important role in the physical and psychosocial preparedness of the mother ( Hassanzadeh et al., 2019) [4]. These classes can be helpful for pregnant women and families to develop birth plan, make decisions during pregnancy and labour; change delivery to a pleasant event for the mothers via improving the psychological and emotional aspects of delivery, help in choosing pain management methods; and prepare for breastfeeding. Childbirth preparation classes also prepare women to identify unexpected complications that may contribute to maternal mortalities such as gestational hypertension, postpartum hemorrhage and infection (Hassanzadeh et al., 2021) [5].

Childbirth self-efficacy implies the woman's assessment of the ability to cope with stressful situations and the implementation of essential behaviors; this mechanism is composed of two parts of expected outcome and expected self-efficacy, both of which play significant role in how the woman handles the delivery process. The expected outcome implies woman's belief that a particular behavior leads to a particular outcome, while the self-efficacy expectation refers to woman's belief in the ability to succeed in a particular behavior under his or her control of a particular condition (Timmermans et al., 2019) [6]. High self-efficacy at birth was associated with low-risk pregnancies, fewer caesarean sections, less labor pains and low postpartum depression rates (El-Kurdy 2017) [7].

There is a direct positive association between the degree of realization of expectations regarding childbirth and the satisfactory feeling after childbirth. A strong sense of maternal self-efficacy was also linked to a less severe experience of pain during delivery and high level of woman's satisfaction (Duncan et al., 2017) [8]. The maternal expectations during labor play an important role in specifying woman's response to childbirth experience so that women might have a safe and emotionally satisfying experience of labor and a rapid recovery both mentally and physically in the puerperium (Punjot et al., 2018) [9].

It was essential for nurses to assess the knowledge regarding normal delivery among the pregnant women to prevent possible complication and to reduce the maternal and neonatal mortality ratio, and perinatal mortality and morbidity is contributing to healthy mother (Serçekuş, & Başkale 2018) [10]. The support from nurses or a midwife through the application of a suitable coping strategy can better help women with birth pain and coping with the birth process itself. On the contrary, the consequences of non-controlling of birth pain can be uterine cervical damage after delivery, pelvic muscularity, fetal stress, and negative birth experiences that can induce long term mental trauma in women (Šalanská & Moravcová 2019) [11].

Nurses could provide education and consultations to pregnant women before, during, and after delivery as the crucial duty of the nurses that can affect the performance of the pregnant woman. Nurses may correct incorrect health behaviors, improve the pregnancy consequences, and change the pregnancy period and delivery to a pleasant memory through midwifery education and consultation (Karimi et al., 2018) [12].

## 1.1. Significance of the Research

Becoming a mother is an important stage in every woman's life. The most different period for women in growth into parenthood is precisely pregnancy and delivering period. Though pregnancy is wonderful and very joyful news in most women's lives, on the same part the women will have emotional disturbances towards the process of childbirth (Rahul et al., 2018) [13]. According to World Health Organization's (2018) report, maternity care should aim to ensure a positive birth experience for every woman. Therefore, fear and pain of childbirth should be considered as a serious clinical problem to improve maternal health (WHO 2018) [14].

During the recent decade, the increasing rate of caesarean and the changes in the reasons for its use has become a serious problems concerning mother and infants' health and as an extra economic load upon the health and medication systems of the country (Karimi et al., 2018) [12].On other hand natural childbirth has physiological and psychological benefits for mothers, families and for health care cost reduction (Campbell and Nolanm, 2018) [3].

Fear of unknown in pregnant women increase complications of pregnancy, labour and consequently the medical intervention. Pregnant mothers often need prenatal education to decide on childbirth options as positioning during labor, pain relief methods, infant care and breast feeding. Participation in childbirth classless can increase women's level of knowledge regarding childbirth and potential effect of anxiety and fear from labour process ( Hassanzadeh et al., 2019) [4]

Although antenatal educations is crucial factor to empower and prepare women for birth process, it's not clear how childbirth classes can influence women's fear and prepare them positively toward childbirth. Childbirth preparation classes are not applied in Egyptian health care systems. Therefore, pregnant women fell under the threats of inadequate information, and fear from childbirth which lead to requested CS without medical indications (El-Nemer 2015) [15].

### 1.2. Aim of the Research

This research aimed to evaluate the effect of childbirth preparation classes on women's knowledge, self- efficacy and satisfaction to cope with labour pain.

### 1.3. Research hypotheses

H1- The level of knowledge and self-efficacy in coping with labor pain will be increased in pregnant women who receive childbirth preparation classes (study group) than who don't (control group).

H2- Pregnant women who received childbirth preparation classes will be satisfied more than pregnant women who received routine care.

### 1.4. Operational definitions

***Childbirth preparation Classes***

They are classes that provide information and support to facilitate childbirth and to enhance the ability of an individual to develop and perform the role of parent and teach pregnant women breathing and exercise techniques to use during labour.

***Childbirth self-efficacy***

Childbirth self-efficacy is a type of self-belief among the women and the judgment of the ability to cope with a labor pain. This construct includes the confidence in the effectiveness of the appropriate behavior in obtaining the desired results (outcome expectancy), and the confidence in showing the appropriate behavior during the childbirth (Efficacy expectancy).

## 2. SUBJECTS AND METHOD:

### 2.1. Research Design

A quasi-experimental research design (time series, pre/post-test) was used, two groups were studied.

### 2.2. Setting

This research was conducted at antenatal outpatient clinic in Benha University Hospital which includes one room divided into diagnostic and examination areas. As well as, waiting area for women admission where the researchers interviewed the recruited women to implement the childbirth preparation classes. This clinic provides services of obstetrics and gynaecological care, pregnancy follow up and family planning counselling. It started from 9am to 12pm.

### 2.3. Sampling

A purposive sample of 70 pregnant women among those attended the above mentioned setting for a period of six months with randomly division into two groups (control group= 35 women who received only routine hospital care and study group= 35 women who received the childbirth preparation classes in addition to routine hospital care).

The selection of studied sample was according to the following inclusion criteria: primigravida as (primigravida women are more stressed in adapting to new role as a mother so they are more inclined to participate in childbirth preparation classes), attending antenatal clinic at 33-34 weeks gestational age, women can read and write and free from any medical or obstetrics disorders and agree to participate. Exclusion criterion: Twins pregnancy, abnormal presentation or position, absence in more than one session of counselling.

## 2.4 Tools of Data Collection

Four tools were used for data collection:

### *2.4.1. First tool: - A Structured Interviewing Questionnaire*

It was designed by the researchers after reviewing related literatures (El-Kurdy 2017)[7]. (Pinar et al., 2018)[1], it was written in an Arabic language. It consisted of demographic characteristics of pregnant women (age, residence, level of education, occupation and transportation to access health facility, times of receiving antenatal care, source of information regarding the process of labour).

### *2.4.2. Second tool: - Maternal Knowledge Questionnaire*

Maternal knowledge questionnaire was adapted from (Rahul et al., 2018)[13] and was translated into Arabic language by the researchers. The 20- close-ended items consisted of (4) sections. Section (1) general knowledge regarding childbirth process (5 items), section (2) knowledge about preparation for childbirth process (5 items), section (3) knowledge about true labour pain and coping strategies (4 items), section (4) knowledge about care of baby and breastfeeding (6 items),

### *Scoring*

The pregnant women who checked correct answer (yes) was given (3), while the one who checked incorrect answer (No) was given (2) and the one who checked an item (Don't know) was given (1). As well as, women' total knowledge score was classified as the following:

- Poor when the total score was less than 50%
- Average when the total score was 50% to less than 75%
- Good when total score was 75% to 100%.

### *2.4.3. Third Tool: - Childbirth Self-Efficacy Inventory (CBSEI)*

Childbirth Self-Efficacy Inventory (CBSEI): was adopted from (Rungsiyanond, 1997) [16] (Lowe, 1993)[17] and was translated into Arabic language. The CBSEI is a self-report instrument that measures self-efficacy expectancies and outcome expectancies for coping with labor pain that are assessed before and after participation in childbirth preparation classes. Self-efficacy expectancy was defined as “a personal conviction that one can successfully perform required behaviors in a given situation”, and outcome expectancy was defined as “the belief that a given behavior will lead to a given outcome”

The - CBSEI consists of the four subscales outcome expectancy active labour (Outcome-AL), self-efficacy expectancy active labour (Efficacy-AL), outcome expectancy second stage labour (Outcome-SS), and self-efficacy expectancy second stage labour (Efficacy-SS).

### *Scoring*

A five points likert-scale from “not at all helpful (score =1)” to “very helpful (score = 5)” for the outcome expectancy scales, and “not at all sure (score =1)” to “very sure (score =5)” for the self-efficacy expectancy scales. Each of the two active labour subscales (Outcome-AL and Efficacy-AL) has 15 items thus it yields a scale score from 15 to 75. Each of the second stage labour subscales (Outcome-SS and Efficacy-SS) has 16 items thus it yields a scale score from 16 to 80. A total childbirth outcome expectancy score was computed by summing the Outcome-AL and Outcome-SS scale scores thus it can yield a scale score from 31 to 155.

A Total Self-efficacy expectancy score was computed by summing the Efficacy-AL and Efficacy-SS

### *2.4.4. Fourth tool: - Numerical Rating Scale (NRS)*

It was adopted from (Breivik et al., 2008 & Jones et al., 2007) [18] [19]. This tool was used during the first and second stages of childbirth. In the NRS, the women had the option to verbally rate the scale from 0 to 10 or put a dot on a line indicating the level of pain. Score 0 indicates no pain, while score 10 represented the most intense pain. The pain score was classified as the following:

- Mild pain (1 – 3).
- Moderate pain (4 -6).
- Sever pain between (7 -10).

### *2.4.5. Fifth tool: - Visual analogue satisfaction scale (VAS)*

It is used to measure women's satisfaction. The VAS was adopted from Singer &Thode, (1998) [20]. The VAS scale is an instrument in which 0 (zero) represents that the subject was unsatisfied with the care provided and 10 represents that the subject was satisfied.

***Scoring:***

- 0 = Unsatisfied
- 1-9 = Moderate satisfied
- 10 = Satisfied

## 2.5. Method

The research was executed according to the following steps:

### *2.5.1 Administrative Approval*

This research was conducted under the approval of the Faculty of Nursing Ethical Committee, Benha University. An official permission was obtained from the directors of the pre-mentioned setting to conduct the research after explaining its purpose.

### *2.5.2. Validity*

The tools of data collection were submitted to a panel of three nursing experts in the field of obstetrics and gynaecology to test the content validity, modification were carried out according to the panel' judgments on clarity of sentences and the appropriateness of content.

### *2.5.3. Reliability*

The reliability was done by Cronbach's Alpha coefficient test. The correlation coefficient for knowledge was 0.79; childbirth self-efficacy inventory was 0.88.

### *2.5.4. Ethical considerations*

- The study approval was obtained from Scientific Research Ethical Committee of the Faculty of Nursing at Benha University to the fulfilment of this research.
- The aim of the research will be explained to each woman before applying the tools to gain confidence and cooperation.
- A signed consent was obtained from each parturient woman who participated in the research.
- The women will be free to withdraw from research at any time.
- The research has no physical, social or psychological risks on the women.

- All tools of data collection will be burned after statistically analysis to promote confidentiality of the study.
- The research tools were ensured that the research didn't touch participant's dignity, culture, traditional and religious aspects and didn't cause any harm for any participant during data collection. Also didn't include any immoral statements and respect human rights.
- Each woman will be informed about time throughout the study.

### *2.5.5. A Pilot Study*

The pilot study was carried out on 10% of the total time of data collection (3 weeks) to test the clarity and applicability of the research tools as well as estimation of the time needed to fill the questionnaire and detect any problem of the statements such as sequence and clarity that might interfere with the process of data collection. No modifications were done. Women involved in the pilot study were included in the sample.

### *2.5.6. Field Work*

To fulfil the aim of this research, the following phases were adopted, preparatory phase, assessment phase, planning phase, implementation of the childbirth classes' phase and evaluation phase. These phases were carried out from the beginning of June, 2021 and completed at the end of November, 2021 covering six months. The researchers visited the previously mentioned setting three days/week from 9.00 Am to 12.00 Pm until predetermined sample size completed.

#### *Preparatory Phase*

During this phase, the researchers reviewed local and international related literatures about the various aspects of the research problem to be acquainted with magnitude and seriousness of the problem that help the researchers to prepare the required data collection tools.

#### *Assessment Phase*

Interviewing began first with control group then with study group to avoid bias.

#### *Control Group*

Early in the morning, the researchers went to the outpatient clinic and checked clinical records to identify pregnant women who met the inclusion criteria. The researchers invited the potential participants to participate in the research. Women were greeted and informed of the overall purpose of the study and provided with all information about the research.

Then, Women were asked to complete the demographic form and CBSEI tools, the researchers were present to answer any questions. They were informed that data would be collected in week 1 to establish a baseline (pre test), three weeks later (post test), and 24-48 hour after delivery (follow up). Also, Home address and phone number were obtained from the participants for reminding of the time for collecting post test and follow up data.

After three weeks, the researchers telephoned the women and confirmed the presence in outpatient clinics, the researcher met with the participants individually to answer the post-test questionnaire (CBSEI tool).

Lastly, the researchers reviewed the lists of the labour unit and postpartum unit daily to locate the study participants for follow up data collection and also telephoned the participants daily to know if any case delivered outside the study setting and collect follow up data. The CBSEI was administered in the postpartum unit 24 to 48 hours after the delivery.

***Study Group***

After the last control group participant gave birth, the researchers initiated recruitment of the study group. The same recruitment, informed consent, and the same pre-test data collection procedures used with control group were used with the study group. In addition, women in the experimental group were informed that women needed to attend three 45- 60 minute childbirth class sessions over a three weeks period.

The researchers informed women of the time, date, place of classes and schedule of three classes. In case women could not attend class on the scheduled day, could attend on a more convenient day and were informed to contact the researcher at any time. Lastly, for collection of data in the postpartum unit 24 to 48 hours after delivery, the same procedures used with the control group were used with the study group.

***Planning Phase***

Based on results obtained from study group during assessment phase, the childbirth preparation classes were developed. Sessions number and its contents, different methods of teaching, and instructional media were determined accordingly to study group. The childbirth preparation classes were constructed and included the following:

The instructional content for *the first class* included (physiological changes during labor, birth plan, premonitory signs of labour, differences between true and false labour pain, what to bring to the hospital, and stages of labour).

*The second class* focused on strategies to cope with labor pain. The content specifically included (Nature of labour pain, medical and non-medical coping with labour pain).

*The third class* focused on reviewing content of previous classes and postpartum information that included (the normal weight of a baby after delivery, time of starting breastfeeding, diet preferred after normal delivery, baby care).

***Implementation of the childbirth preparation classes***

Pregnant women in the control group received only routine care by hospital staff while in the study group received routine hospital care, in addition to participation in the childbirth preparation classes through three prenatal sessions each 1 week apart. Each class had (5 participants) only to allow for individual attention and participation and followed COVID 19 precautions. Each class lasted 45-60 minutes and this was sufficient time to non pharmacologic pain relief methods, shared experiences, and discussed any questions. Each woman was informed about the time of the next sessions at the end of the session. The subsequent session started by a feedback about the previous session and the objectives of the new session, simple Arabic language was used to suit women' level of understanding. At the end of each session, women' questions were discussed to correct any misunderstanding.

The first class was held with participants at 33-34 weeks gestational age. During the first class the purpose of this research was detailed. The childbirth preparation handbook was distributed and an explanation of how to use it was provided.

The second class focused on strategies to cope with labour pain. At the beginning, the researcher made orientation of the labour and delivery unit to the participants in order for the primiparous women to get familiar with the environment (physiologic and emotional states source of self-efficacy). Then the researcher demonstrated exercise, position changes, breathing control and relaxation. After that, role-play was performed as though they were in labour.

During the third class, content from class one and class two were reviewed. Participants were also encouraged to discuss any problems encountered. Later, participants learned how to do labour positions, breathing strategies and relaxation techniques. The researcher provided

support and compliments when doing these techniques correctly (social persuasion source of self-efficacy). Finally, delivery and postpartum information were provided.

***Evaluation phase***

The effectiveness of the childbirth preparation classes was evaluated three weeks later (post test), and 24-48 hour after delivery (follow up) using the same format of tools which used before implementation for both groups. Evaluation started first with control group then with study group to avoid bias. As well as, the women's satisfaction regarding the care provided was evaluated using visual analog satisfaction scale. At almost time the researchers followed women via telephone.

***Statistical Design***

Data was verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 20) was used for that purpose, followed by data tabulation and analysis. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). Test of significance (t test, chi-square). A significant level value was considered when $p \leq 0.05$. In addition, A highly significant level value was considered when $p < 0.01$.

## 3. RESULTS

**Table 1** Distribution of studied groups regarding demographic characteristics.

| Socio-demographic characteristics | Study group n=35 | | Control group n=35 | | $X^2$ | p-value |
|---|---|---|---|---|---|---|
| | No | % | No | % | | |
| Age in (years) | | | | | | |
| <20 years | 8 | 22.9 | 6 | 17.1 | 1.18 | >0.05 |
| 20 <25 years | 16 | 45.7 | 17 | 48.6 | | |
| 25 <30 years | 9 | 25.7 | 10 | 28.6 | | |
| ≥30years | 2 | 5.7 | 2 | 5.7 | | |
| Mean ±SD | 23.6571±4.15114 | | 23.4571±4.52017 | | | |
| Residence | | | | | | |
| Rural | 21 | 60.0 | 17 | 48.6 | 0.921 | >0.05 |
| Urban | 14 | 40.0 | 18 | 51.4 | | |
| Educational level | | | | | | |
| Read & write | 5 | 14.3 | 4 | 11.4 | 1.809 | >0.05 |
| Primary education | 9 | 25.7 | 10 | 28.6 | | |
| Preparatory | 14 | 40.0 | 11 | 31.4 | | |
| Secondary | 5 | 14.3 | 5 | 14.3 | | |
| University | 2 | 5.7 | 5 | 14.3 | | |
| Occupation | | | | | | |
| Housewife | 15 | 42.9 | 14 | 40.0 | 0.111 | >0.05 |
| Employed | 14 | 40.0 | 14 | 40.0 | | |
| Students | 6 | 17.1 | 7 | 20.0 | | |
| Transportation to access health facility | | | | | | |
| Motorcycle | 1 | 2.9 | 1 | 2.9 | 1.722 | >0.05 |
| Car | 26 | 74.3 | 21 | 60.0 | | |
| Walking | 8 | 22.9 | 13 | 37.1 | | |
| Times of receiving antenatal care | | | | | | |
| One | 17 | 48.6 | 23 | 65.7 | 3.150 | >0.05 |
| Two | 11 | 31.4 | 5 | 14.3 | | |
| Three | 5 | 14.3 | 5 | 14.3 | | |
| More than three | 2 | 5.7 | 2 | 5.7 | | |

Table (1): reveals that there was no statistically significant difference between study and control group regarding socio demographic characteristics. Moreover nearly half of both study and control group ( 45.7 -48.6) aged from 20 < 25 years old. This reflect group homogenous.

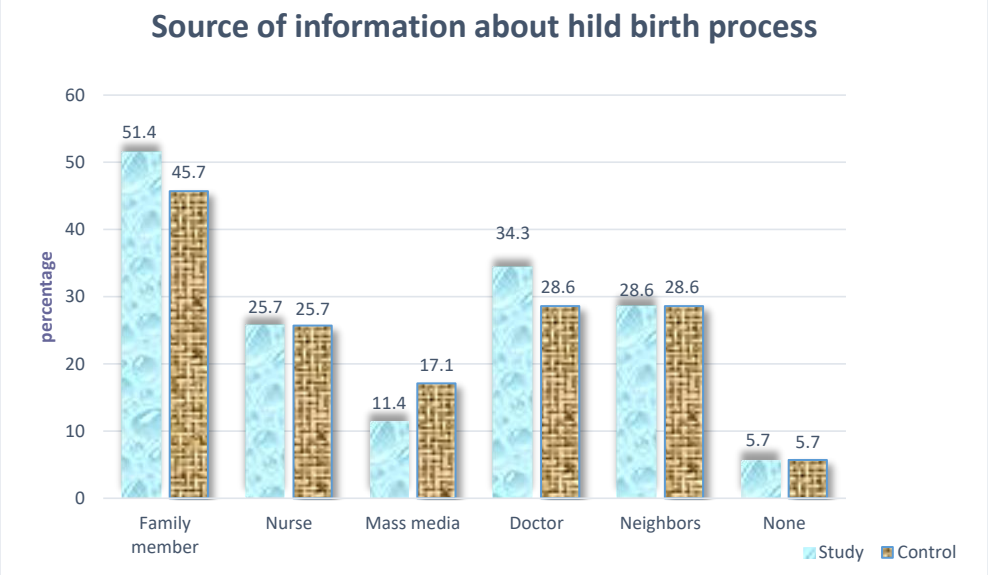


**Figure 1** Distribution of studied groups regarding source of information about childbirth process.

Figure (1): Shows that nearly half of studied women in both study and control groups (51.4%- 45.7%) respectively had source of information about childbirth process from family members while minority had source of information from mass media.

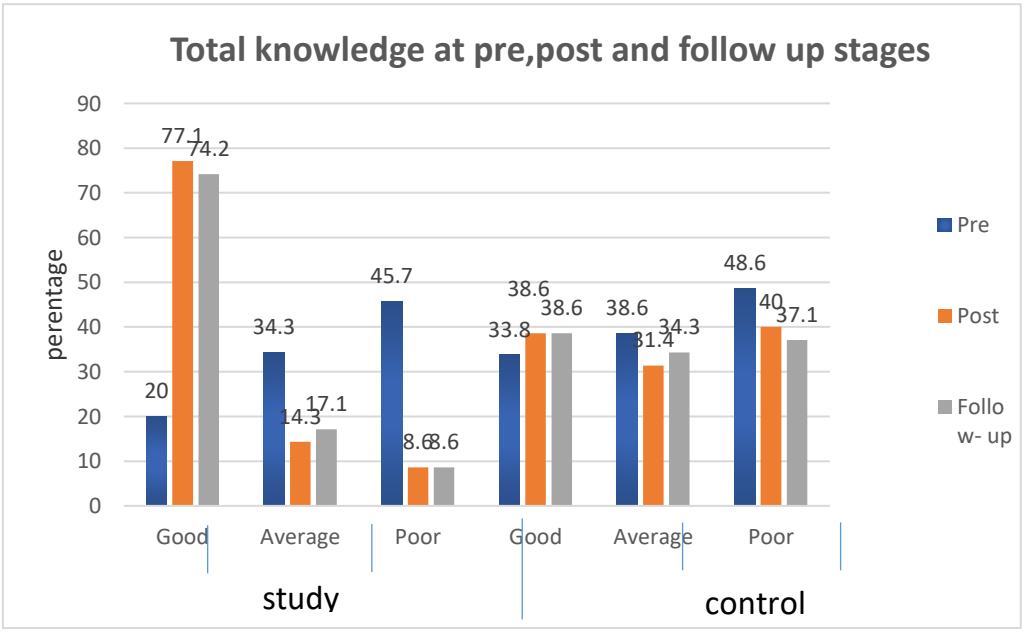


**Figure 2** Distribution of studied groups regarding total knowledge regarding childbirth preparation classes throughout three stages ( pre, post and follow up ) .

Figure (2): Shows that more than three quarters of studied women in the study group (77.1% – 74.3) %) had good knowledge regarding childbirth preparation classes compared to only one quarter of control group (28.6%) at both post and follow up stages respectively.

**Table 2** Distribution of studied groups according to total knowledge about childbirth through three stages (before, after and follow up) childbirth preparation classes implementation.

| knowledge | Pre-implementation | | Post- implementation | | Follow -up | |
|---|---|---|---|---|---|---|
| | Mean | ±SD | Mean | ±SD | Mean | ±SD |
| General knowledge about Child birth process | | | | | | |
| Study | 3.2286 | ±2.65779 | 8.3714 | ±2.48626 | 7.9714 | ±1.27154 |
| Control | 3.4000 | ±2.40343 | 3.5714 | ±2.29175 | 5.2000 | ±1.41005 |
| t/p-value | 0.283/0.778 | | 8.398/<0.001** | | 8.635/<0.001** | |
| Knowledge about Preparation for child birth process | | | | | | |
| Study | 4.2286 | ±2.12943 | 7.6286 | ±2.90117 | 8.1429 | ±2.48694 |
| Control | 3.9429 | ±2.02837 | 4.5143 | ±1.91544 | 4.0571 | ±1.43369 |
| t/p-value | 0.575/0.567 | | 5.300/<0.001** | | 8.420/<0.001** | |
| Knowledge about True labour pain and coping strategies | | | | | | |
| Study | 1.7143 | ±2.02298 | 6.1429 | ±1.83340 | 6.3714 | ±1.89559 |
| Control | 1.8286 | ±1.79026 | 2.9429 | ±2.71101 | 3.0571 | ±2.07141 |
| t/p-value | 0.250/0.803 | | 5.785/<0.001** | | 6.983/<0.001** | |
| Knowledge about Care of baby and breast feeding | | | | | | |
| Study | 5.4857 | ±2.80096 | 9.7714 | ±2.55626 | 9.6000 | ±2.39116 |
| Control | 5.4000 | ±2.46386 | 6.5714 | ±3.10868 | 6.4571 | ±3.07115 |
| t/p-value | 0.136/0.892 | | 4.704/<0.001** | | 4.777/<0.001** | |
| Total Knowledge | | | | | | |
| Study | 14.6571 | ±7.63484 | 31.9143 | ±8.80298 | 32.0857 | ±6.69667 |
| Control | 14.5714 | ±6.57216 | 17.6000 | ±7.11337 | 18.7714 | ±5.19097 |
| t/p-value | 0.050/0.960 | | 7.482/<0.001** | | 9.296/<0.001** | |

**independent t test*

Table (2) shows that, there was no statistically significant difference regarding all knowledge items and total knowledge about childbirth between the study and the control group before childbirth preparation classes implementation. However, a highly statistically significant difference (p-values < 0.001) was observed after childbirth preparation classes' implementation (post- test) and 24-48hours after delivery (follow up).

**Table 3** Distribution of studied groups according to total self efficacy through three stages (before, after and follow up) childbirth preparation classes implementation.

| Self-efficacy | Pre-implementation | | Post- implementation | | Follow -up | |
|---|---|---|---|---|---|---|
| | Mean | ±SD | Mean | ±SD | Mean | ±SD |
| Outcome expectancy active labor (Outcome-AL) | | | | | | |
| Study | 36.7429 | ±19.25883 | 13.67799 | ±2.31200 | 60.0571 | ±10.80017 |
| Control | 36.6286 | ±18.36090 | 18.06375 | ±3.05333 | 33.8286 | ±16.03395 |
| t/p-value | 0.025/.980 | | 6.983/<0.001** | | 8.027/<0.001** | |
| Self-efficacy expectancy active labor (Efficacy-AL) | | | | | | |
| Study | 31.8571 | ±16.81936 | 17.40366 | ±2.94176 | 58.4571 | ±15.79528 |
| Control | 30.7714 | ±15.61124 | 15.89133 | ±2.68613 | 37.7714 | ±16.55487 |
| t/p-value | 0.280/0.780 | | 6.276/<0.001** | | 5.348/<0.001** | |
| Outcome expectancy second stage labor (Outcome-SS). | | | | | | |
| Study | 43.2000 | ±16.90075 | 22.84004 | ±3.86067 | 63.9714 | ±17.14726 |
| Control | 44.3714 | ±16.10460 | 15.15062 | ±2.56092 | 44.6000 | ±15.49991 |
| t/p-value | 0.297/0.767 | | 5.211/<0.001** | | 4.958/<0.001** | |
| Self-efficacy expectancy second stage labor (Efficacy-SS). | | | | | | |
| Study | 40.2000 | ±15.70837 | 19.08218 | ±3.22548 | 63.0286 | ±14.77774 |
| Control | 41.8000 | ±14.82407 | 14.50019 | ±2.45098 | 43.2286 | ±13.54315 |
| t/p-value | 0.438/0.663 | | 4.606/<0.001** | | 5.844/<0.001** | |
| Total self efficacy | | | | | | |
| Study | 152.0000 | ±67.45630 | 67.79570 | ±11.45957 | 245.5143 | ±55.45394 |
| Control | 153.5714 | ±62.84027 | 60.91554 | ±10.29660 | 159.4286 | ±56.16378 |
| t/p-value | 0.101/0.920 | | 6.137/<0.001** | | 6.453/<0.001** | |

**independent t test*

Table (3) shows that, there was no statistical significant difference regarding total self efficacy between the study and the control group before childbirth preparation classes'

implementation. However, a highly statistically significant difference (p-values < 0.001) was observed after childbirth preparation classes implementation (post test) and 24-48hours after delvery (follow up).

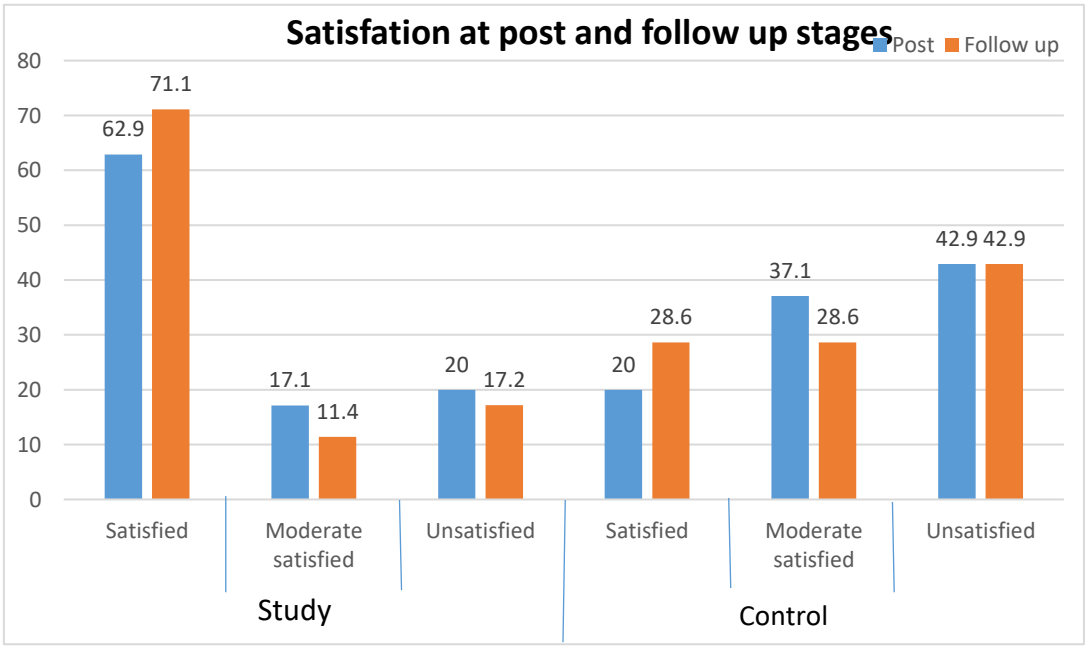


**Figure 3** Frequency distribution of studied groups regarding satisfaction at post-implementation and follow-up stages.

Figure (3): Shows that nearly two thirds of studied women in the study group (62.9%) were satisfied compared to only one fifth of the control group (20%) at post-implementation stage. Additionally nearly three quarters of studied women in the study group (71.1%) were satisfied compared to nearly one quarter of the control group (28.6%) at follow-up stage.

**Table 4** Distribution of studied groups regarding total pain score according to numerical rating scale at follow-up stage.

| **Total pain score** | **Study group n=35** | | **Control group n=35** | | **T test** | **p-value** |
|---|---|---|---|---|---|---|
| | Mean | ±SD | Mean | ±SD | | |
| | 17.0286 | ±6.64426 | 21.5429 | ±6.24190 | 2.93 | 0.005* |

Table (4): clarifies that there was a statistically significant difference between study and control group regarding total pain score according to numerical rating scale at follow-up stage. Women in the study group had significantly lower level of pain score than women in the control group.

**Table 5** Correlation coefficient between total pain score and total satisfaction among study and control group at follow-up stage.

| | **Total pain score** | | | |
|---|---|---|---|---|
| Total Satisfaction | Study group n-70 | | Control group n=70 | |
| | r | p-value | r | p-value |
| | -0.93 | <0.001** | -0.70 | <0.001** |

Table (5) clarifies that, there was a negative highly statistical significant correlation between total pain score and total satisfaction among both study and control group at follow-up stage.

**Table 6** Correlation between total pain score and total self care efficacy among studied women through follow-up.

| | **Total pain score** | | | |
|---|---|---|---|---|
| | Study group n=70 | | Control group n=70 | |
| Total self-care efficacy | r | p-value | r | p-value |
| | -0.87 | <0.001** | -0.72 | <0.001** |

Table (6) clarifies that, there was a negative highly statistically significant correlation between total pain score and total self-care efficacy among both study and control group at follow-up stage.

## 4. DISCUSSION

Pregnancy and childbirth are a long time journey and it is accompanying with physiological, psychological and emotional changes which may cause positive or negative effect on the woman's life, the baby, and the family (Oats and Abraham 2017) [21]. The maternal expectations during labor play an important role in specified a woman's response to childbirth experience so, that women might have a safe and emotionally satisfying experience of labor and a rapid recovery both mentally and physically in the puerperium (Rahul 2018 ) [13].

Child birth preparation classes will be benefit if it is integrated to provide relevant, clear, and appropriate information. The pregnant women must have all information about the labour and delivery process before the 36th weeks of gestation with the emphasis on the use of a birth plan, childbirth preparation, the onset of labour, and pain relief measures (Downe et al., 2015) [22]. Participation in childbirth preparation classes can be associated with increased confidence in women for labor and childbirth, decreased labor pain and moderated the need for analgesics during labor due to reduced anxious feelings, promoted successful breastfeeding, improved women’s relationship with the health care professionals and increase women’s level of knowledge regarding childbirth (Afshar et al., 2016) [23].

The current research aimed to evaluate the effect of childbirth preparation classes on women’s knowledge, self- efficacy and satisfaction to cope with labour pain. The present research revealed that childbirth preparation classes had a positive effect on improvement of pregnant women's knowledge and in turn self-efficacy were also increased in study group compared to control group. Also the majority of women in the study group were satisfied with childbirth preparation classes. So, the research hypotheses were accepted.

Regarding demographic characteristics of both studied groups, the study revealed no significant differences were found between the two groups. This may be due to homogenous distribution of participants to study and control groups and this assured that two groups are equal and decreasing the influence of groups differences that could impact on outcome results. This study finding was supported by (Farzaneh 2017) [24] who reported that there were no

significant differences among the two groups regarding age, educational level, place of residence, and occupation. Also (Korn et al., 2021) [2] who stated that there were no significant differences among the study and control groups regarding demographic characteristics.

Regarding Sources of information about childbirth process, the study revealed that nearly half of the studied women in both study group and control group had source of information from family members more than from nurses and doctors. This may lead to receiving incorrect knowledge from previous experiences or lead to receiving information not based on scientific bases. These findings were similar to the findings of Punjot et al., (2018) [9] who illustrated that most women receive inappropriate and inadequate information about childbirth, and there is a need to discover women's needs to ensure the offering of appropriate and adequate information. Also Malata & Chirwa (2017) [25] who found that the mothers did not satisfy of childbirth information that received during the antenatal period. Childbirth information received by mothers during the antenatal period affect their satisfaction of the care during intrapartum care. It is important for the midwives to know the kind of information that satisfies their clients.

Knowledge of the labor process specifically enhances self-efficacy expectancy by decreasing fear related to childbirth and enhancing the perceived control of physiological and emotional states. Lack of knowledge and unpreparedness of women can lead to emergence of anxiety and complications followed by ever-increasing medical interventions (Hassanzadeh et al., 2019) [6].

The results of the present study shows that more than three quarters of studied women in the study group had good knowledge regarding childbirth preparation classes compared to nearly one quarter of control group at post and follow up stages respectively. This study finding were in the same line with Hassanzadeh et al., (2021) [5] who reported that women who attended the childbirth preparation classes regularly had a higher mean score of knowledge compared to women who did not attend classes regularly. Similarly, in a quasi-experimental study with 132 primiparous women in Turkey, the results demonstrated that women who attended childbirth preparation classes had a higher level of knowledge; responded better to their labour pains; and initiated breastfeeding earlier than the control group (Pinar et al., 2018) [1].

Evidence has shown that participation in childbirth classes reduces anxiety about delivery and generates suitable response to pain. According to the theory of self-efficacy, high self-efficacy is very important because it is the one determinant that affects the motivation and the way an individual will approach and deal with a task, but knowledge and familiarity with the task is required to assess self-efficacy (Schunk, & DiBenedetto, 2021) [26].

Regarding the mean of total self-efficacy expectancy scores obtained by the study groups at pretest, posttest, and follow-up assessment. The study highlighted that, at pretest there were no significant differences between the study and control groups regarding the mean score of total self-efficacy expectancy but there were highly significant differences between the two groups at posttest and during follow-up assessment. Clearly, the mean score of both expectancies were higher in the antenatal education group. This may be due to women who received the session of antenatal education classes learns how to develop self- reliance during labour, increased self-confidence and decreased fear during whole period of childbirth process. Also, learning the techniques of coping during labour pain which can lead to the development of women's self-confidence and childbirth self-efficacy.

This result agreed with (El-Kurdy 2017) [7] who reported that, at pre-test there were no significant differences between the antenatal education and control groups regarding the mean score of both outcome and self-efficacy expectancies. But there were highly significant

differences between the two groups at posttest and during follow-up assessment. This is in consistent with Serçekuş & Başkale (2018) [10] they found no significant differences between the two groups at pre education scores of outcome and self-efficacy expectancies, however a significant differences was found between the two groups at post education scores.

Similarly, Taheri et al., (2014)[27] who showerd a significant difference between the two groups regarding both expectancies only after intervention. Additionally, The study by Duncan et al., (2017) [8] proved that the mean CBSEI of the intervention group was significantly better compared to the control group (mean change difference=64.4, 80% CI).Also this result was similar to the result of study conducted by Isbir et al., (2016)[28] who concluded that there was a significant difference in the mean scores for CBSEI after intervention (229.8 (51.2 SD) - 297.9 (17.8 SD), $p < 0.01$).

Additionally Brixval et al., (2016)[29] indicated that "attending a structured antenatal education program in small classes may increase confidence in own ability to cope at home during labour and confidence in own ability to handle the birth process".

In the present study numerical rating scale was utilized to assess labour pain between the two groups during follow up stage and the results of the current study revealed that there was a statistically significant difference between study and control group regarding numerical total pain score according to numerical rating scale at follow-up stage and women in the study group had significantly lower level of pain score than women in the control group. This may be due to that women who were in the education group being well informed and recognized the source of pain which lead to lower fear toward normal labour process. Additionally, women learned how to implement coping and practical relaxation techniques during labour pain. Similarly, W.Y. Ip et al., (2019)[30] who found that experimental group demonstrated lower pain level in the first and middle phases of the first stage of labour .

Additionally, Firouzbakht et al., (2015)[31] who concluded that labour pain intensity in the transitional phase of cervical dilatation (8–10 cm) was significantly less in educated group [34]. This was contraindicated with María et al., (2018)[32] found no significant difference between both groups at the second stage of childbirth.

The results of the present study showed nearly two thirds of studied women in the study group were satisfied compared to only one fifth of the control group at post-implementation stage. Additionally nearly three quarters of studied women in the study group were satisfied compared to nearly one quarter of the control group at follow-up stage. This results were accepted by the result of study conducted by (Ricchi et al., 2019)[33] who reported that 96.3% of women attending childbirth classes were satisfied with their classes and reported the classes to be very useful which are similar to the findings of our study. In our study, women with regular attendance reported that childbirth preparation classes reduced their anxiety about labour.

Concerning Correlation between total pain score and total satisfaction between study and control group at follow-up stage, the present study revealed that, there was a negative highly statistically significant correlation between total pain score and total self-care efficacy among both study and control group at follow-up stage. Additionally, there was a negative highly statistically significant correlation between total pain score and total satisfaction among both study and control group at follow-up stage.

## Implications for Nursing

Health education provided to pregnant women should be more than information-giving. It should be health education aimed at development of abilities toward labor and delivery with the ultimate goal being a successful and positive childbirth experience. Findings from this research regarding the effects of childbirth preparation classes provide nurses and health care

providers an evidence-based intervention that can be translated to prenatal care for pregnant women and lead to significant change in usual nursing care in Benha.

Finally, nursing instructors can use the findings from this research to implement the curriculum. In teaching specific topics, such as nursing care for pregnant women, nurse instructors may use these findings to teach self-efficacy concepts and emphasize strategies and techniques that students can use to enhance laboring woman's ability to cope with labor pain so the practical implication of this research is to continue to hold childbirth preparation courses and to encourage women who are undecided whether to attend the course to make a positive decision.

## 5. CONCLUSION

Based on the findings of the current study; the study concluded that research hypotheses were supported and pregnant women who receive childbirth preparation classes (study group) had better knowledge and higher level of self-efficacy in coping with labor pain than who didn't (control group). Pregnant women of study group who received childbirth preparation classes were satisfied more than pregnant women of control group who received routine care.

## RECOMMENDATIONS

Based on the findings of the current research, the following recommendations were suggested:

- Outpatient clinics should be provided with posters and pamphlets regarding simple methods for dealing with labour pain to increase self-efficacy of pregnant women.
- From the finding that childbirth preparation classes were significant in improving women's knowledge, self-efficacy and satisfaction; the researchers recommended that childbirth preparation classes must be seriously upheld in every antenatal clinic.

### Further Researches

- Replication of the study on large representative probability sample is highly recommended in different maternity hospitals to achieve more generalization of the results.
- Further studies should be conducted to incorporate the views and responses of midwives nurses, as the study only depended on the responses of women.
- Future research is also needed about the factors associated with fear of birth. Using different measurement methods for anxiety and depression.

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### Conflict of Interests :

Authors announced that there is no any conflict of interest.

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# REFERENCES


[1] Pinar G, Avsar F, Aslantekin F, (2018): Evaluation of the impact of childbirth education classes in Turkey on adaptation to pregnancy process, concerns about birth, rate of vaginal birth, and adaptation to maternity: a case control study. Clin Nurs Res. 2018;27(3):315–42. https://doi.org/10.1177/ 1054773816682331.

[2] Korn, L.; Koren, G.; Yaakov, A.; Madar, G.; Blau, A., (2021): Evaluating the Effectiveness of Childbirth Preparation Courses on Women's Self-Efficacy among Ultra-Orthodox Jewish Religious Women in Israel. Healthcare 2021, 9, 818. https:// doi.org/10.3390/healthcare9070818

[3] Campbell V., Nolanm M., (2018): 'It definitely made as difference' agrouned theory study of yoga for pregnancy and womens self efficacy for labour. Midwfery. 68-74-83. Dio. 10. 1016/J.midw: 2018: 110. 005[PUBMED].

[4] Hassanzadeh R, Abbas-Alizadeh F, Meedya S, Alizadeh-Charandabi SM and Mirghafourv and M, (2019): Assessment of childbirth preparation classes: a parallel convergent mixed study. Reproductive health 16:160 https://doi.org/10.1186/s12978-019-0826-2.

[5] Hassanzadeh R, Abbas-Alizadeh F, Meedya S, Mohammad-Alizadeh- Charandabi S, Mirghafourvand M. (2021): Primiparous women's knowledge and satisfaction based on their attendance at childbirth preparation classes. Nurs Open. 2021;8:2558–2566. https://doi. org/10.1002/nop2.787

[6] Timmermans E, Timmermans O, Mestdagh E, & Bogaerts A, (2019): The effect of prenatal interventions on self-efficacy in women during childbirth. A Systematic Review. Journal of gynecology and women's health ISSN. 16(5):2474-7602.

[7] El-Kurdy R (2017): Antenatal Education on Childbirth Self-Efficacy for Egyptian Primiparous Women: A Randomized Control Trial." IOSR Journal of Nursing and Health Science (IOSR-JNHS) 6.4 (2017): 15-23.

[8] Duncan LG, Cohn MA, Chao MT, Cook JG, Riccobono J, et al. (2017): Benefits of preparing for childbirth with mindfulness training: a randomized controlled trial with active comparison. BCM Pregnancy and Childbirth 17: 140-151.

[9] Punjot R, PatidarN, JitesworiN, Devi et al., (2018): A Study to assess knowledge regarding the process of normal labor among primigravida mothers in selected hospitals of Pune city. Inno J Nur Health 2018; 4(2): 66-71.

[10] Serçekuş, & H. Başkale (2018): Effects of antenatal education on fear of childbirth, maternal self-efficacy and parental attachment, Midwifery. 34, 2016, 166-172.

[11] Šalanská E & Moravcová M (2019): Coping strategies in midwife care for women with labour Pain. Journal of nursing social science related to health and illness. http://doi.org/10.32725/kont.2019.018.

[12] Karimi S1, Kazemi2F, Masoumi SZ, Shobeiri F, Roshanaei G (2018): Effect of Consultation and Educating in Preparation Classes for Delivery on Pregnancy Consequences: A Randomized Controlled Clinical Trial. Electronic Physician (ISSN: 2008-5842) http://www.ephysician.ir 8 (11) : 3177-3183.

[13] Rahul Punjot, Nitin Patidar, Naorem Jiteswori Devi et al., (2018): A Study to assess knowledge regarding the process of normal labor among primigravida mothers in selected hospitals of Pune city. Inno J Nur Health 2018; 4(2): 66-71.

[14] World Health Organization (2018): WHO recommendations: Intrapartum care for a positive childbirth experience. Retrieved from http://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf;j session id=3E28B54319CE269BEF 9B03A0ED683CE0?sequence=1childbirth.

[15] El-Nemer (2015): Effect of Childbirth Counseling on Pregnant Women Requested for Cesarean Delivery, IOSR Journal of Nursing and Health Science (IOSR-JNHS), 4 (4), 2015, 24:29.

[16] Rungsiyanond (1997): Self-efficacy: the exercise of control. New York: W.H. Freeman and Company.

[17] Lowe, N.K. (1993): Maternal confidence for labor: Development of the childbirth self-efficacy inventory. Research in Nursing & Health, 16(2), 141-149.

[18] H. Breivik, P.C. Borchgrevink, S.M. Allen, L.A. Rosseland, L Romundstad., E.K. Breivik Hals, G. Kvarstein, and A. Stubhaug, (2008): Assessment of pain. British Journal of Anaesthesia, 101 (1), 2008, 17-24.

[19] K.R. Jones, C.P. Vojir, E. Hutt, and R. Fink, (2007): Determining mild, moderate, and severe pain equivalency across pain intensity tools in nursing home residents. Journal of Rehabilitation Research and Development, 44 (2), 2007, 305–314.

[20] Singer, A.J., & Thode, J.R., (1998): Determination of the minimal clinically significant difference on a patient visual analog satisfaction scale. Acad Emerg Med. 5: 1007-11.

[21] Oats & Abraham, Llewellyn-Jones (2017): Fundamentals of Obstetrics and Gynaecology. (10th Ed). (China: Elsevier 2017) 40, 54

[22] Downe, K. Finlayson, Ö. Tuncalp, and A.M. Gülmezoglu, (2015): What matters to women: a systematic scoping review to identify the processes and outcomes of antenatal care provision that are important to healthy pregnant women. BJOG: An Inernational Journal of Obstetrics & Gynaecology. 123 (4), 2015, 529-539

[23] Afshar Y, Wang ET, Mei J, Esakoff TF, Pisarska MD, Gregory KD. (2016): Childbirth education class and birth plans are associated with a vaginal delivery. Birth 2016;44(1):29–34. https://doi.org/10.1111/birt.12263.

[24] Farzaneh Soltani, Zahra Eskandari, Batoul Khodakarami, Parisa Parsa, Ghodratollah Roshanaei (2017): The Effect of Self-Efficacy Oriented Counselling on Controlling the Fear of Natural Delivery in Primigravida Women. Journal of phamacaulogical sciences and research . Vol. 9(10), 2017, 1757-1761

[25] Malata A & Chirwa E (2017): Childbirth information feeds for first time Malawian mothers who attended antenatal clinics. Malawi Medical Journal. 2017; 23(2):42-6.

[26] Schunk, D.H.; & DiBenedetto, M.K. (2021): Self-efficacy in education. In Handbook of Motivation at School (34–54); Wentzel, K.R., Miele, D.B., Eds.; Routledge: New York, NY, USA, 2021.

[27] Taheri, M.A. Mazaheri, M. Khorsandi, A. Hassanzadeh and M. Amiri (2014): Effect of Educational Intervention on Self efficacy for Choosing Delivery Method among Pregnant Women in 2013. International Journal of Preventive Medicine, 5 (10), 2014, 1247-1254.

[28] İsbir G, İnci F, Önal H, Dıkmen YP (2016): The effects of antenatal education on fear of childbirth, maternal self-efficacy and post-traumatic stress disorder (PTSD) symptoms following childbirth: an experimental study. Appl Nurs Res 32: 227-232.

[29] Brixval CS, Axelsen SF, Thygesen LC, et al., (2016): Antenatal education in small classes may increase childbirth self-efficacy: Results from a Danish randomised trial. Sexual & Reproductive Healthcare. 2016; 10: 32-34. Http://dx.doi.org/10.1016/j.srhc.2016.03.00 3

[30] W.Y. Ip, C.S. Tang, and W.B. Goggins, (2019): An educational intervention to improve women's ability to cope with childbirth, Journal of Clinical Nursing 18, 2019, 2125–2135.

[31] Firouzbakht M., Nikpour M., Khefri S., Jamali B., Kazeminavaee F., and Didehdar M., (2015): The Effectiveness of Prenatal Intervention on Pain and Anxiety during the Process of Childbirth Northern Iran: Clinical Trial Study. Annals of Medical and Health Sciences Research 5(5), 2015, 348–352.

[32] María J Sánchez-Cunqueiro1, María Isabel Comeche2, Domingo Docampo (2018): On the relation of self-efficacy and coping with the experience of childbirth. Journal of Nursing Education and Practice. Vol. 8, No. 6.

[33] Ricchi, A., La Corte, S., Molinazzi, M. T., Messina, M. P., Banchelli, F., & Neri, I. (2019). Study of childbirth education classes and evaluation of their effectiveness. Clinica Terapeutica, 171(1), 78–86. https://doi. org/10.7417/CT.2020.2193.