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# The relationship between childbirth self-efficacy and coping styles of problem based and emotive based in nulliparous pregnant women

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## Abstract:

**BACKGROUND:** Vaginal childbirth is the most stressful physical and mental event for most women, which necessitates the use of coping styles. Furthermore, childbirth self-efficacy will be one of the effective factors to cope with this stressful situation and doing compatible behaviors with childbirth pain. Therefore, the aim of this study was to determine the relationship between childbirth self-efficacy and coping styles of problem based and emotive based in nulliparous pregnant women.

**MATERIALS AND METHODS:** This study is a descriptive-correlational study that is done over 323 nulliparous pregnant women attending the health centers in the city of Zahedan in 2020–2021. Data were collected by participants' demographic questionnaire, childbirth self-efficacy questionnaire of Lowe, and coping styles questionnaire of Folkman and Lazarus. The data were analyzed using Spearman's correlation coefficient test, linear regressions model, and multiple regression in SPSS software version 22.  $P < 0.05$  was considered statistically significant.

**RESULTS:** Results of Spearman's correlation coefficient test showed a significant direct correlation between problem-based coping style and childbirth self-efficacy ( $P = 0/017$ ,  $r = 0.13$ ); but, there was no significant direct correlation with emotive-based coping style ( $P = 0/782$ ,  $r = 0.01$ ). According to the linear regressions model, just the problem-based coping style is predicted childbirth self-efficacy ( $P = 0/006$ ).

**CONCLUSIONS:** According to the findings, nulliparous pregnant women should be responsible, have a positive reassessment of vaginal childbirth, plan to solve their problems, and look for social support (all of these are part of a problem-based coping style) to increase and improve their childbirth self-efficacy. Furthermore, designing appropriate educational interventions based on problem-based coping style is necessary.

## Keywords:

Coping skills, emotive, delivery, nulliparity, pregnant women, problem based, self-efficacy

## Introduction

Childbirth self-efficacy is defined as an important indicator of women's coping ability during labor and childbirth,<sup>[1]</sup> which can change the motivation and attitude of pregnant mothers toward normal childbirth.<sup>[2]</sup> Mothers with high self-efficacy have lower levels of fear and pain, use less pain-relieving drugs during labor, and are

more satisfied with childbirth.<sup>[3]</sup> However, women with low childbirth self-efficacy are afraid to harm the baby with their inappropriate behavior during childbirth, are less involved in behavioral strategies to reduce pain during childbirth, and are unable to cope well with childbirth pain.<sup>[4]</sup> According to Sánchez-Cunqueiro *et al.* study in Spain, nulliparous pregnant women had a high level of childbirth self-efficacy.<sup>[5]</sup> However, the study results of Shojae *et al.*

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in Mashhad showed that nulliparous pregnant women had a moderate level of childbirth self-efficacy.<sup>[6]</sup> Bandura (1997) believes that self-efficacy affects all aspects of behavior and emotional activities such as anxiety, stress, and thought patterns.<sup>[7]</sup> Therefore, since vaginal childbirth is the most stressful physical and mental event for most women.<sup>[8]</sup> Childbirth self-efficacy will be one of the effective factors to cope with this stressful situation.<sup>[9]</sup> Depressed pregnant women with high stress have lower performance than other pregnant women;<sup>[10]</sup> however, if they feel that they can cope well with stress, they will probably be immune to the adverse health effects of stress.<sup>[11]</sup> Furthermore, the previous studies have also shown that coping with stress is more important than the nature of stress, and exposure of pregnant women to pregnancy and childbirth causes many challenges in life that necessitates using coping styles for adaptation.<sup>[12]</sup>

Coping styles are the endeavors of intellectual, emotional, and behavioral activities of a person that are used to cope with stress to overcome or minimize its effects,<sup>[13]</sup> which is done to maintain mental health,<sup>[14]</sup> and are influenced by different factors such as age, education, previous experiences, culture, and living environment.<sup>[13]</sup> Lazarus and Folkman categorize coping styles into two dimensions: problem based and emotive based. Problem-based coping styles are responses that are done to modify the source of the problem to reduce the risk of stress<sup>[13]</sup> and include looking for social support, responsibility, scheduled problem-solving, and positive reassessment.<sup>[15]</sup> Emotive-based coping styles are to tend to make psychological changes to reduce the emotional impact of the problem without affecting the source of the problem<sup>[13]</sup> and include direct confrontation, contenance, avoidance, and escape-avoidance.<sup>[15]</sup>

Lazarus states that both problem-based and emotive-based coping styles reduce psychological distress, and people in stressful situations use both types of coping styles.<sup>[16]</sup> Therefore, each of these two types of coping styles can be used constructively or nonconstructively as a method of combating problems.<sup>[17]</sup> Huizink *et al.* study also showed that using appropriate coping styles during pregnancy reduces pregnancy adverse outcomes such as nausea and vomiting, low back pain, change in appetite, postpartum depression, and other adverse outcomes in pregnancy.<sup>[18]</sup> The study of Salehi *et al.* showed that 85% of pregnant women use emotive-based coping styles and 15% of them use problem-based coping styles.<sup>[19]</sup>

A study by Brown *et al.*<sup>[20]</sup> showed a positive and significant correlation between perceived self-efficacy and both dimensions of coping styles. Whereas, according to the study of Scheenen *et al.*,<sup>[21]</sup> there was a positive and significant correlation between perceived self-efficacy

and problem-based coping styles and a significant negative correlation between emotive-based coping styles and self-efficacy. On the other hand, Cheraghligol *et al.*<sup>[22]</sup> found a significant positive correlation between self-efficacy and emotive-based coping style and found no correlation between self-efficacy and problem-based coping style.

Given that the results of the previous studies in different populations on psychological issues, including coping styles and self-efficacy, are highly contradictory and despite significant advances in care and education of mothers during pregnancy, the psychological dimensions of pregnant women are rarely considered,<sup>[23]</sup> it seems that addressing the mental health during pregnancy is a logical justification for recognizing the underlying factors of maternal and child health.<sup>[23]</sup> Therefore, since unfortunately, no study has been conducted on the two variables mentioned in pregnant women in Iran, and nulliparous women face severe stress and anxiety when faced with new responsibilities, such as childcare and breastfeeding,<sup>[24]</sup> the present study was conducted to determine the relationship between childbirth self-efficacy and coping styles of problem based and emotive based in nulliparous pregnant women in 2020–2021 in health centers of Zahedan.

## Materials and Methods

### Study design and study population

This study is a descriptive-correlational study that was conducted from September 22, 2020, to April 28, 2021, on 323 nulliparous pregnant women referring to health-care centers in Zahedan.

After getting approval from the Ethics Committee (<https://ethics.research.ac.ir/EthicsProposalViewEn.php?id=149485>" IR. ZAUMS.REC.1399.188) of the University, expressing the objectives of the study, obtaining informed consent from eligible nulliparous pregnant women, and considering the ethical codes, the sampling was conducted. First, health centers of the north, south, west, and east were considered as one class (all centers of the city of Zahedan), and then from the list of existing centers in any of these classes (proportional to the total number of centers covered by each class), some centers were randomly selected as a cluster. From each cluster, 1–5 health centers were selected for sampling using the draw method according to the population (in proportion to the size), and the desired sample size was selected through convenient sampling from health centers. The sample size was estimated 317 individuals based on the study results of Rabani Bavojda,<sup>[25]</sup> and by the formula for comparing sample size for a relation and considering the confidence level of 95% and test power of 80% and then by considering the loss of samples, 333

individuals were enrolled.

$$N = ([Z_{1-\alpha/2} + Z_{1-\beta}] / C[r])^2 + 3$$

$$C(r) = \frac{1}{2} \log(1 + r/1 - r)$$

$$C(0.35) = \frac{1}{2} \log(1.35/0.65) = 0.158$$

$$N = ([1.96 + 0.84] / 0.158)^2 + 3 = 317.05$$

### Inclusion and exclusion criteria

Inclusion criteria were as follows: the individuals must be Iranian and the resident of the city of Zahedan who has completed at least elementary education and has not studied medical sciences, they have not given birth yet and have no history of infertility and no history of the abnormal fetus, they had singleton pregnancy and gestational age was 24–36 weeks based on accurate and reliable LMP or first-trimester ultrasound, stressful events did not occur during the 6 months before entering the study, the individuals were not suffering from speech and hearing disorders that impede the communication with the researcher, they were not addicted to drugs, had no history, or being involved with other medical conditions or psychological problems and they had cell phones. Exclusion criteria included: the patient did not complete the questionnaires.

### Instrument and data collection

Data collection tools included participants' demographic questionnaire, Lowe childbirth self-efficacy questionnaires, and Folkman and Lazarus coping styles questionnaire.

### Questionnaire and measurements

The childbirth self-efficacy questionnaire of Lowe was a 62-item self-report instrument that is rated in the Likert scale from 1 (completely uncertain) to 10 (completely certain). It consists of two sections that each section has two parts. The first section is related to the active phase of labor that the first part measures the expectation of outcome related to the active phase of labor (questions 1–15) and the second part measures the expectation of self-efficacy of this active phase (questions 15–30). The second section is related to the second stage of childbirth that the first part measures the expectation of outcome (questions 31–46) and the second part considers self-efficacy related to the second stage of childbirth (questions 42–62). By summing the scores of the expected outcome and the expected self-efficacy of the active phase and the second stage of childbirth will be obtained the total score of childbirth self-efficacy. The score range is 62–620.<sup>[26]</sup> Based on the received scores, individuals were divided into three categories: low (62–247.2), moderate (247.3–433.6), and good (433.7–620).

The coping styles questionnaire of Folkman and Lazarus is a 66-item questionnaire that its answers are set at a four-point Likert scale from I'm not used at all = 0 to I'm using it a lot = 3. This questionnaire contains two subscales of problem based (23 questions) and emotive based (27 questions). According to the instructions provided by Folkman and Lazarus, 16 questions are not used in the calculation of subscales. The scores range of problem-based and emotive-based coping styles is 0–69 and 0–81, respectively.<sup>[16]</sup> To equalize the range of scores, the score obtained from each style was divided the number of questions of that style and was determined at 0–3. The score of each one (problem based or emotive based) was higher, it was the dominant coping style used by the individual.

The childbirth self-efficacy questionnaire of Lowe and the coping style questionnaire of Folkman and Lazarus are valid and reliable tools. In Iran, by Khorsandi *et al.*, the validity of the Persian version of childbirth self-efficacy has been confirmed through content and structure validity and the reliability of four parts of the questionnaire has been confirmed by Cronbach's alpha 0.84–0.94.<sup>[27]</sup> Furthermore, Alipour *et al.* (2010) were determined the validity of the Persian version of coping style by the content validity and its reliability by Cronbach's alpha of 0.85.<sup>[28]</sup> In our study, after obtaining the consent and completing questionnaires by 30 nulliparous pregnant women who had the inclusion criteria, the reliability of the questionnaires of childbirth self-efficacy and coping style was confirmed with Cronbach's alpha coefficient of 0.97 and 0.83, respectively.

At the beginning of the study, after obtaining informed consent, it took individuals about 30 min to complete the questionnaires. Finally, if the researcher was seeing unanswered questions, she was completing them by asking the research units. The researcher also provided a telephone number to the research units to contact if they had any questions about the research.

### Statistical analysis

The collected data were analyzed using SPSS Statistical Software version 22 (IBM Company, Armonk, NY, U.S.A) and using Spearman's correlation coefficient tests and multiple and general linear regression. Furthermore, Mann-Whitney *U*-test was used to evaluate the mean score of childbirth self-efficacy according to the dimensions of coping styles. In all tests,  $P < 0.05$  was considered statistically significant.

### Ethical statement

The study was approved by the Institutional Ethics Committee and compliance to Helsinki's Declaration on the Rights of Participants in Research was fully ensured. Participation in the study was totally voluntary, and the

participants were permitted to withdraw from a study at their choice without having any negative implications. The nulliparous pregnant women were included in the study group only after explicitly taking informed consent.

## Results

Ten individuals were excluded from the study (due to incomplete completion of questionnaires). Resultantly, the final analysis was performed on 323 individuals.

The average age of individuals was  $24.62 \pm 5.3$  years. In addition, 265 individuals (82%) were from average socioeconomic status, 166 ones (51.4%) had college education, and 261 nulliparous pregnant women (80.8%) were homemakers. Three hundred participants (92.9%) had wanted pregnancies, 275 ones (85.1%) did not have a history of abortion, 195 individuals (60.4%) did not perform prepregnancy care, and 316 ones (97.8%) did not attend childbirth preparation classes. Two hundred and thirty-three participants (72.1%) did not have educated people in medical sciences in their families.

Among nulliparous pregnant women, 234 individuals (72.4%) were using problem-based coping style and 89 ones (27.6%) were using emotive-based coping style. Furthermore, 68 ones (21.1%) had low, 209 individuals (64.7%) had moderate, and 46 ones (14.2%) had good childbirth self-efficacy.

Table 1 shows mean and standard deviation of childbirth self-efficacy scores and dimensions of coping styles scores in nulliparous pregnant women.

Spearman test results showed that there was a significant direct correlation between childbirth self-efficacy and problem-based coping style ( $P = 0.017, r = 0.13$ ); however, there was no significant direct correlation between childbirth self-efficacy and emotive-based coping style ( $P = 0.782, r = 0.01$ ).

Based on the general linear regression model, only problem-based coping style predicted 2.2% of the variance of childbirth self-efficacy [Table 2]. The linear regression equation of predicting childbirth self-efficacy based on the problem-based coping style:

Childbirth self-efficacy score =  $269.1 + (37.901 \times \text{score of problem-based coping style})$  (Equation 1).

Furthermore, the mean score of childbirth self-efficacy in individuals with problem-based coping style was 169.99 and in individuals with emotive-based coping style was 140.99, in which this difference was significant based on the Mann-Whitney U-test ( $P = 0.013, z = -2.4$ ).

Examining the simultaneous effects of intervening variables on the relationship between problem-based coping style and childbirth self-efficacy using multiple regression test showed that except for the occupation variable (homemaker) that was removed from the regression model, other variables in total did not have significant multiple correlation with childbirth self-efficacy ( $r = 0.194, P = 0.354, F = 1.109, df = 11$ ) [Table 3].

## Discussion

The aim of this study was to determine the relationship between childbirth self-efficacy and coping styles of problem based and emotive based in nulliparous pregnant women.

The results of the present study showed that 72.4% of nulliparous pregnant women use a problem-based coping style to cope with the challenges and stresses of childbirth, and the mean and standard deviation of the problem-based coping style score was  $1.46 \pm 0.4$ . Theoretically, individuals resort to problem-based

**Table 1: Mean and standard deviation of childbirth self-efficacy scores and dimensions of coping styles scores in nulliparous pregnant women**

Variable	Mean±SD
Childbirth self-efficacy	324.48±107.3
Problem-based coping style	1.46±0.4
Emotive-based coping style	1.29±0.3

SD=Standard deviation

**Table 2: Linear regression test results about the relationship between dimensions of coping styles and childbirth self-efficacy**

Variable	β	df	r	F	Test result (P)
Problem-based coping style	37.901	1	0.15	7.5	0.006
Emotive-based coping style	15.817	1	0.05	0.8	0.357

**Table 3: Multiple regression test results about the examining the simultaneous effects of intervening variables on the relationship between problem-based coping style and childbirth self-efficacy**

Variable	β	P	Exp (B)
Problem-based coping style	35.883	0.027	0.143
Existence of educated people in medical sciences in the family	19.313	0.187	0.081
Perform prepregnancy care	10.349	0.423	0.047
Type of pregnancy	4.324	0.857	0.010
Socioeconomic status	3.256	0.763	0.018
Age	0.393	0.771	0.020
Occupation (student)	-2.584	0.934	-0.005
Education	-4.622	0.572	-0.039
Participate in childbirth preparation classes	-13.465	0.747	-0.018
History of abortion	-15.303	0.375	-0.051
Job (employed)	-24.165	0.195	-0.081

coping styles when they assess the stressful situation as changeable in their cognitive assessment of challenging situations.<sup>[29]</sup> In the study by Sarani *et al.* on 500 pregnant women using a revised questionnaire of coping styles with pregnancy stress, the results showed that the mean score of the problem-based style was  $34.9 \pm 12.3$  with a range of 6–55 and it was moderate;<sup>[30]</sup> which is consistent with the results of the present study. This consistency of the results can be due to the high sample size of both studies and the same study population. However, based on the results of a study by Bayrami *et al.* on 97 nulliparous pregnant women using the Moss and Billings coping questionnaire (19 questions), the mean and standard deviation of coping ability with stress was  $13.85 \pm 2.12$  from the range of 0–57 which was at a low level,<sup>[31]</sup> which is inconsistent with the results of our study. How people cope with the stresses and adapt to them, is influenced by different factors such as age, education, previous experiences, culture, and living environment, and also, the intensity and frequency of stresses to individuals are effective in using and choosing the type of coping styles with stress.<sup>[32]</sup> The difference in studies results in terms of the extent of application and the type of coping styles that pregnant women use in the face of pregnancy stresses are influenced by the above factors. On the other hand, the effect of used different tools to measure coping styles cannot be ignored in different results.<sup>[13]</sup>

The results of the present study about the level of childbirth self-efficacy showed that 64.7% of nulliparous pregnant women had moderate childbirth self-efficacy and the mean and standard deviation of childbirth self-efficacy was  $324.48 \pm 107.3$ . Childbirth self-efficacy score is important because based on studies, increasing childbirth self-efficacy is effective to choose the vaginal childbirth method.<sup>[33]</sup> In this regard, in the study by Mahmoodjanlou *et al.* on 25 nulliparous pregnant women in Mashhad using the Lowe childbirth self-efficacy questionnaire, the results showed that the mean and standard deviation of childbirth self-efficacy score was  $362.75 \pm 99.82$ .<sup>[33]</sup> Furthermore, Ghazaie *et al.* conducted a study on 39 nulliparous pregnant women in Nowshahr using the Lowe childbirth self-efficacy questionnaire, the results showed that the mean and standard deviation of childbirth self-efficacy was  $289.00 \pm 43.53$  and was moderate.<sup>[34]</sup> People with low self-efficacy may think that events are harder than they really are that this increases stress and depression. While people with high self-efficacy overcome obstacles and stand up to problems, by improving self-management skills. Therefore, understanding self-efficacy can help maintain health-promoting behaviors<sup>[17]</sup> that affect the mental health of mother and infant.<sup>[30]</sup> Both studies are consistent with the results of the present study. Age is one of the factors affecting self-efficacy,<sup>[35]</sup> and since the average

age of research units in both studies is similar to the present study, and, the study population is the same in the studies, can be the reason for the consistency of the results of the studies with each other.

In the present study, there was a significant direct correlation between the problem-based coping style and childbirth self-efficacy, and the problem-based coping style predicted it. The direct correlation between childbirth self-efficacy and coping styles is as follows: self-efficacy is usually associated with active and adaptive coping and it causes that the person tends to them instead of avoiding them, and shows more perseverance and effort.<sup>[36]</sup> In this regard, in the study by Cheraghligol *et al.* on 240 students at eight schools in Tehran to predict students' self-efficacy based on progress motivation and coping styles with stress, the results showed that there was a significant correlation between the variables of coping style and achievement motivation with the variable of self-efficacy ( $P < 0.01$ ) and predicted 33.7% of the variance of self-efficacy variable;<sup>[22]</sup> which is consistent with the results of this study. The results of the present study and the above study can be justified as follows: a person who uses a problem-based coping style, usually takes responsibility for solving the problem, looks for the right information about the problem, looks for help from others, makes realistic decisions, and has high self-efficacy.<sup>[17]</sup> Although the results of the present confirm the findings of the study above about predicting self-efficacy by coping styles, no accept the results of the study about predicting self-efficacy based on emotional coping styles (separately). This difference could be due to the completely different populations of the two studies. In addition, childbirth is considered a very stressful event, and researchers have given it a score of 40 out of 100;<sup>[30]</sup> that too much stress of this period can affect the results of the study. Furthermore, Scherrer's general self-efficacy questionnaire and 60-item coping styles were used in the study of Cheraghligol *et al.*, which was different from the questionnaires used in our study. In a study conducted by Bavojudan *et al.* on 354 people referring to self-reported detoxification centers in Kerman to determine the relationship between general self-efficacy beliefs with coping styles in male substance abusers, the results showed that general self-efficacy had a significant positive correlation with problem-based coping style ( $P < 0.01$ ) and a significant negative correlation with emotive-based coping style ( $P < 0.01$ ).<sup>[25]</sup> On the other hand, the study results of Mirkohi and Boogar on 57 patients with mild diabetes and 59 patients with severe diabetes (based on glycosylated hemoglobin) in Qazvin to determine the role of coping styles with stress in predicting the self-efficacy of type 2 diabetes management showed that regression coefficients in the predictor variable of emotive-based coping style were  $-0.36$ ,<sup>[35]</sup> and were significant ( $P < 0.01$ ). That is, if

emotive-based coping style increases 1 unit, self-efficacy is reduced by about 36%. Regression coefficients were not significant for problem-based and avoidance predictor variables.<sup>[37]</sup> These two studies are inconsistent with the results of the present study. The reason for the difference in the present study with the two previous studies was the difference in the type of tools for measuring coping styles and self-efficacy. So that, in the present study, the Lowe childbirth self-efficacy questionnaire and the coping style questionnaire of Folkman and Lazarus were used. However, in the study of Bavojudan *et al.* was used the general self-efficacy scale of Schwartz and Jerusalem (1979) and the coping style questionnaire of Billings and Mouse (1981), and in the study of Mirkohi and Boogar was used the scale of self-efficacy in diabetes management and questionnaire of coping styles with stress of Endler and Parker. Furthermore, the difference in the study population and differences of cultural, psychological, and social can affect the results of different studies that they are other reasons for the difference between the results of the present study and the mentioned studies.

### Limitation and recommendation

One of the limitations of this study was a large number of questionnaires questions, how to respond was clearly explained to the patients, and responses were monitored. Furthermore, nonrandom sampling is another limitation of the present study. One of the strengths of the present study was the study population that they were only nulliparous pregnant women, and in this respect, they had the same conditions.

It is recommended that future studies focus on the effects of training coping styles to control stress and promoting childbirth self-efficacy in nulliparous pregnant women and on the wider statistical community and also by controlling different sociocultural variables. Furthermore, conduct studies to determine other psychological factors related to childbirth self-efficacy.

### Conclusions

According to the results of this study, the dimension of problem-based coping style is related to childbirth self-efficacy of nulliparous pregnant women. Therefore, nulliparous pregnant women should control stresses, adapt to childbirth, be responsible, have a positive reassessment of vaginal childbirth, plan to solve their problems, look for the right information and social support about childbirth, and make realistic decisions (all of these are part of a problem-based coping style) to increase and improve their childbirth self-efficacy. Furthermore, designing appropriate educational interventions based on problem-based coping style are necessary.

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### Conflicts of interest

There are no conflicts of interest.

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