



A correlation study on perceived stress and pain perception during labour among Primi Gravida mothers in selected primary health centre, Tirupur District

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Abstract

Background: Labor pain has been reported as severe pain and can be considered a model of acute visceral pain. Labor pain is a subjective experience that is affected not only by physiological factors but also by psychosocial, cultural, and environmental factors. Professional support provided throughout labor might develop women's sense of control and ability to cope with labor pain, which may prevent negative labor experience.

Objectives: To correlate the perceived stress and pain perception among primi gravid mothers.

Design: A correlational survey was found to be an appropriate research design for the study.

Setting: The study was conducted in Primary health centre, Nathakadaiyur, Tirupur District.

Samples: 50 primi gravid mothers fulfilling the inclusion criteria were selected by using simple random sampling technique.

Data collection procedure: All the participants were given a questionnaire to complete the questions related to their baseline proforma of primi gravid mothers, rating scales on pain perception and perceived stress scale on labour pain, 30 minutes were given to complete the questionnaire.

Results: The findings revealed that, there was no significant correlation between perceived stress and pain perception. There was no significant association between perceived stress and pain perception with their demographic variables like age, gestational age, education, occupation, family income, type of family, residential area and previous source of information regarding labour pain.

Conclusion: There was no significant correlation between perceived pain and pain perception. It shows that as perceived stress increased the pain perception is decreased.

Keywords: Labor pain, physiological factors, Primi Gravida mothers, Primary health centre, environmental factors

Introduction

Background of the study

Pregnancy is a potentially stressful event. Prenatal stress alters maternal endocrine and immune systems, has been implicated in the etiology of prenatal complications or postnatal psychiatric disorders, and may adversely affect fetal health.

Childbirth is a life-turning event, in the most basic sense of the word. It means giving birth to a new life but also becoming something new parent. The birth of a child alters all aspects of the new parents' lives. Both their inner and outer worlds change and these changes last forever. A new personality adapted to the needs of the baby evolves, and for a woman the physiological transformations are profound. In all cultures and times, women have used rites or strategies and sought support from more experienced women during these deep life changes. This need for support is also associated with awareness of the fact that childbirth is associated with pain and risk of infant and maternal morbidity. Even these days, despite of very low threats to

the infant's and mother's health for women who have access to modern obstetric care, and pain relief, the women and their partners still are worry about the birth (M Firouzbakht *et al.*, 2015) [8].

Firouzbakht M *et al.*, 2015 [8] conducted a study on the Effectiveness of Prenatal Intervention on Pain and Anxiety during the Process of Childbirth, he concluded that prenatal education and psychological support of mothers during labor reduce anxiety, pain intensity, and interventions like episiotomy and CS. Prenatal trainings as part of routine pregnancy care could be used as an effective means of improving mothers' health.

Irena Stepaníková *et al.*, 2020 stated that, the stress in utero and during early childhood contributes to psychological problems in the later life of the child, measuring early-life stress is complicated by methodological challenges Life stress during pregnancy/postpartum is a multi-faceted phenomenon not fully captured by any single survey instrument. Novel approaches for holistic stress assessment are needed in the future. Selection of currently available

instruments should be informed by careful conceptual and methodological consideration. When a more comprehensive assessment of life stress is warranted, combining several types of measures may be helpful, although it must be weighed against increased respondent burden.

Physiological reactions to pain notify a person of a dangerous biological agent in the body. However, labor pain is not a pathologic factor and rather is a physiological condition due to contraction of the smooth muscles of the uterus to guide the fetus and other contraceptive products out of the body. In this regard, the intensity of this pain is unique such that it is reported as the worst pain in the world. Therefore, its control has been one of the most important health care goals worldwide. Various factors can affect the severity of pain such as experience, fear, anxiety, race, cultural, social, and environmental factors, demographic, and biological characteristic. In addition to pain, childbirth is a critical psychological, social, emotional, and tangible event and a prerequisite for every woman (Boron WF, 2016) [4].

Childbirth stress is referred to any stress or anxiety of the mother about the course of delivery and pregnancy. Mother's contact with stressful agents during pregnancy can cause adverse outcomes such as low-weight birth, preterm labor, and spontaneous abortion. Also, stressors increase the catecholamine's and cortisol levels and can suppress the immune system. Mental stress, anxiety, fear of labor pain, the unknown space of the labor room and lack of trust in its staff can contribute to increased labor length and the proliferation of pain through secretion of catecholamines, cortisol, and epinephrine to overcome these tensions. (Taheri Z, Khorsandi M, Amiri M, Hasanzade A, 2015) [2].

Statement of the problem

A correlation study on perceived stress and pain perception during labour among primi Gravida mothers in selected Primary health centre, Tirupur District.

Objectives

- To correlate the perceived stress and pain perception among primi gravid mothers.
- To find out the association between perceived stress and selected demographic variables among primi Gravida mothers.
- To find out the association between pain perception and selected demographic variables among primi Gravida mothers.

Operational definitions

Correlation study: Is a type of non-experimental research method in which a researcher measures two variables, understands and assesses the statistical relationship between them with no influence from any extraneous variable.

Perceived stress: Perceived stress is the feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period.

Pain perception: Common measures of pain perception in the experimental context are pain threshold and pain tolerance. Pain threshold is defined as the minimum amount

of stimulation that is reliably reported as being painful. Pain tolerance is the maximum stimulus intensity that is tolerated by the individual.

Labour: Labor is a physiologic process during which the fetus, membranes, umbilical cord, and placenta are expelled from the uterus.

Primi Gravida mothers: Primigravida (PG), is a woman who conceives for the first time, is in a high-risk group.

Assumptions

The study assumed that,

- All the pregnant women will have stress regarding labour process.
- Stress among pregnant women will change the labour process.

Delimitations

The study is limited to the primi gravid mothers who are:

- Attending antenatal OPD
- Present during data collection period
- Willing to participate in the study

Review of literature

Saeedeh Mohamad Beigi, Mahboubeh Valiani, Mousa Alavi, Soheila Mohamadirizi (2020) [11], conducted a study to determine the relationship between attitude toward labor pain and length of the first, second, and third stages in primigravida women, concluded that, factors affecting labor pain include physiological, psychological, and social factors, among which psychological factors refer to attitudes and beliefs about labor pain. As the attitude toward labor pain increases, the duration of the first and second stages of labor decreases, but there is no correlation between the attitude toward labor pain and the duration of the third stage of labor. Many factors affect mother's attitude toward labor pain, and these factors can positively affect the attitude of the pregnant mother toward the pain of childbirth. This will reduce the length of the stages of labor. As a result, complications due to the prolonged labor can be prevented. Many factors can be corrected, and caregivers' interventions can help to promote positive experiences, prevent negative experiences, or change feelings afterward. Even the unchanging factors also respond to interventions.

The majority of women experience pain during labour and childbirth. For many women it is the most significant pain they will experience in their life. However, despite it being associated with the same fundamental physiological process, not all women experience labour pain in the same way. Women's evaluations of labour pain can range from excruciating to pleasurable in different individuals or on different occasion. Some women manage the pain well, requiring minimal assistance and reporting positive experiences, whilst others do not cope well and request intervention in order to avoid or alleviate the pain. Curiously, women have reported labour pain as a paradoxical experience of pain – one that is both excruciating but also desirable because of its positive outcome of the birth of their child. It is thus clear that labour pain is a complex and unique experience of pain and, consequently, is challenging to manage.

Whitburn *et al.*, 2017^[9] conducted a study on the meaning of labour pain: how the social environment and other contextual factors shape women's experiences, stated that, this investigation into labour pain has helped to deepen our understanding of this unique and complex experience. A determining factor in a woman's experience of pain during labour is its perceived meaning. The meaning influences how the woman responds to the pain – either productive and purposeful pain that she feels she can cope with, or threatening pain that she feels she needs help to alleviate. The meaning of the pain is shaped by the context within which it is experienced. The social environment plays a powerful role in influencing the woman's cognitions and emotions, thereby helping construct the meaning of her pain. Focused promotion of labour pain as a productive and purposeful pain, and efforts to empower women to utilize their inner capacity to cope, as well as careful attention to women's cognitions and providing a supportive social environment during labour, may improve women's experiences of labour pain and decrease their need for pain interventions. In addition, these findings emphasize the importance of individualized care for each laboring woman as determined by her unique experience.

Molgora S *et al.*, (2018)^[6], Fear of childbirth is defined as negative perceptions in mothers that influence by various reasons such as mother's personal characteristics. Fear of childbirth can also be associated with other psychological tensions such as feeling pain more severe than the actual level, prolonged labor length, and depression. Severe childbirth fear increase elective cesarean section and may follow by an increase in the complications of cesarean delivery on mother and baby, that cause a financial burden on family and state and increase hospitalization time and, as a result, filling beds in the hospital. To date, various pharmacological and non-pharmacological approaches have been proposed for controlling and reducing pain. Distraction is one of these techniques that has attracted more attention from researchers and medical communities over the past 5 years, specifically in the field of dentistry and phlebotomy in children.

Paria Amiri *et al.*, (2019)^[5] stated that pain control and the stress associated with labor and delivery are among the most important issues of health care system. Use of distraction techniques during childbirth is reported to reduce pain and stress of labor. Distraction techniques can reduce the pain and stress of labor, but further studies by using the distraction techniques are needed to reach a decisive conclusion.

Materials and methods

Research approach: Research that explores the interrelations among variables of interest without intervention on the part of the researcher is a correlation study. In the present study, the investigator intended to correlate the perceived stress and pain perception.

Research design

The research design for the present study was descriptive design. The present study attempts to correlate the study perceived stress and pain perception among primi mothers. Therefore, a correlational survey was found to be an appropriate research design.

Variables

Dependent variable: Perceived stress and pain perception.

Associate variable: Selected background factors.

Research setting: The study was conducted in Primary health centre, Nathakadaiyur, Tirupur District.

Population: The population for the present study was all the mothers attended antenatal OPD at Primary health centre, Nathakadaiyur, Tirupur District.

Sample: The sample consisted of 50 primi mothers of Primary health centre, Nathakadaiyur, Tirupur District.

Sampling technique: Simple random sampling technique was used to select the sample for the study.

Development of tool: A baseline proforma, pain perception scale and perceived stress scale was prepared with the help of literature, personal experience and discussion with experts.

Description of tool

Section A: Baseline proforma of the samples

Section B: Pain perception scale

Section C: Perceived stress scale.

Tools were prepared in English.

Section A: Baseline proforma: It consists of obtaining information regarding age, gestational age, education, occupation, family income, residential area and previous source of information regarding labour pain.

Section B: Pain perception scale was used to measure the level of pain perception experienced by primi Gravida mothers.

Section C: Stress assessment scale. It is a standardized scale to assess the stress of the mother during pregnancy and labour. It is the most widely used psychological instrument for measuring the perception of stress. This section seeks the information regarding the perceived stress on 4 point scale. It consists of 36 items.

0 = Definitely No

1 = To a small extent

2 = Somewhat

3 = Always

4 = Very severe

Scoring Procedure: PSS scores are obtained by reversing responses (e.g., 0=4, 1=3, 2=2, 3=1 and 4=0) to the ten positively stated items (items 2, 3, 6, 7, 11, 12, 23, 26, 27 and 36) and then summing across all scale items.

Data collection procedure

The data on perceived stress and pain perception were collected from primi mothers in primary health center, Nathakadaiyur. The data were collected for 4 weeks in the month of February 2021. Permission was sought and obtained from PHC Medical officer. The primi mothers were selected by simple random sampling method among

those who fulfilled the sampling criteria. The questionnaire was administered to the primi mothers regarding perceived stress and pain perception separately. Confidentiality of the information shared was assured the mothers were well co-operative. Approximately 30 minutes was taken to complete one sample.

Plan for data analysis: The data were analysed by using both descriptive and inferential statistics.

- Baseline proforma of the samples were described by frequency and percentage distribution.
- Correlation of perceived stress and pain perception among primi mothers were analyzed by using mean, standard deviation and 'r' value.
- The association between perceived stress and their demographic variables among primi mothers were analyzed by using chi square.
- The association between pain perception and their demographic variables among primi mothers were analyzed by using chi square.

Results

Section A: Percentage wise distribution of antenatal mothers according to their demographic variables shows that, thirty-four (34%) percentage of the mothers were in the age group of 21 to 23 years, 32% of them had higher secondary education, 40% of the mothers were private employee and 62% of them were earning below Rs. 5000 as monthly income. Similar percentage (52%) of them were belongs to nuclear family and living in semi urban area respectively. 44% of the mothers were in 39-40 weeks of gestation and most of them (40%) got information from their friends and relatives.

Section B: The findings revealed that the correlation between perceived stress and pain perception among antenatal mothers.

Antenatal mothers	Mean	SD	Score	
			'r'-value	P-value
Pain perception	51.08	4.91		
Perceived stress	98.1	3.81	-0.242	0.09

The obtained co-efficient of correlation $r = -0.242$ was negative. It shows that when the stress in increased the pain perception is decreased. There was no significant correlation between perceived stress and pain perception ($P > 0.05$).

Section C: The association between perceived stress and selected demographic variables among primi Gravida mothers. Chi Square value to find the association between the perceived stresses among the primi gravid mothers. The findings revealed that there was no significant association between perceived stresses with demographic variables.

Section D: The association between pain perception and selected demographic variables among primi Gravida mothers. Chi Square value to find the association between the pain perceptions among the primi gravid mothers. The findings revealed that there was no significant association between pain perceptions with demographic variables.

Conclusion

- ❖ There was no significant correlation between perceived stress and pain perception. As the stress increased the pain perception among the primi gravid mothers in decreased.
- ❖ There was no significant association between pain perceptions with demographic variables.
- ❖ There was no significant association between perceived stresses with demographic variables.

Recommendations

- The same study can be conducted with large samples to generalize the findings.
- A comparative study can be done between different settings
- A comparative study can be done between multi and primi mothers.

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