



RESEARCH ARTICLE

A STUDY ON EFFECT OF SELECTED ANTENATAL EXERCISES ON OUTCOME OF LABOUR AMONG PRIMIGRAVIDA MOTHERS - A LITERATURE REVIEW.

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Abstract

The researcher aims to assess the effect of selected antenatal exercises on outcome of labour among primigravida mothers. It was observed that most of the caesarean section and assisted deliveries occurred due to rigid cervix, prolonged labour and inability of the mother to cope up with the labour process and that affects both maternal and fetal outcome and further inquiry showed that the antenatal mothers lacked even basic knowledge about the importance of antenatal exercises. So it was concluded that there is association between antenatal exercises and labour outcome.

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Introduction:-

According to Global Health Observatory data given by World Health Organization, every day in 2015, about 830 women died due to complications of pregnancy and child birth. The risk of a woman in a developing country dying from a maternal-related cause during her lifetime is about 33 times higher compared to a woman living in a developed country.¹

According to UNICEF, globally about 800 women die every day of preventable causes related to pregnancy and childbirth, 20% of these women are from India. Annually, it is estimated that 55,000 women die due to preventable pregnancy related causes in India.²

To study the same, the researcher reviewed many literature and it was obtained through various database includes CINHAI (Cumulative index TO Nursing & Allied Health Literature), MEDLINE (Medical Literature Analysis & Retrieval System Online), PubMed, Science Direct, SpringerLink, ProQuest & Google scholar.

Material Methods & Findings:-

The study is headed mainly on the effect of antenatal exercises on outcome of labour among primigravida mothers attending maternity services.

A RCT was done to examine the efficacy of antenatal exercises on maternal and neonatal outcomes in elderly primigravida at the Physical Therapy Department of Bolak Abu-Ela General Hospital, Cairo, Egypt in 2013-14. 60 elderly primigravida at 14 weeks' gestation within the age range of 35-40 years were divided randomly into equal experimental and control group. Present Pain Intensity scale, partograph and APGAR score were the main tools of data collection. Participants of experimental group showed a statistically significant difference in the intensity of labor pain when cervical dilatation was between 7 and 8 cm ($P = 0.000$), duration of first stage of labor ($P = 0.026$),

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and neonates' APGAR scores at the first and the fifth minute of life ($P = 0.000$) compared with participants of control group. The study concluded that antenatal exercises are very effective in decreasing adverse effects and labor complications in elderly primigravida and their neonates.³

A cross-sectional study was conducted to find out effectiveness of antenatal exercise in facilitating normal labor and also other benefits associated with antenatal exercise during pregnancy in antenatal exercise facility of private clinic and government institution of Indore district in 2013-14. 200 females of age group of 20- 35 years who had recently delivered and did not have any medical/surgical/obstetric complications were selected through sequential sampling technique and equally divided in experimental and control group. A semi structured questionnaire was used as study tool for interview. The data was analyzed using appropriate statistical software (MS excel and SPSS version 20). Chi square test was applied for significance association between variable. The study showed that only 36% of control group females were delivered normally, as compared to 74% experimental group females. In experimental group only 9% females had urinary incontinence after delivery. Main reason for not doing antenatal exercise was not having enough time (42%) followed by not having enough knowledge (31%). Only 30% females of experimental group had the problem of backache, as compared to 63% control group females who suffered from same problem. ($X^2=21.887$, $p=0.001$, $RR=0.493$, CI 0.356-0.683). Thus the study concluded that females practiced antenatal exercise had less chances of caesarean section, back ache and urinary incontinence.⁴

A quasi-experimental control study was conducted to assess the effect of pelvic floor muscle exercise training protocol for pregnant woman during 3rd trimester on labor duration at El-Manial University Hospital, Cairo University, Egypt in 2013-14. 100 pregnant women were recruited by convenient sampling technique and equally divided in to experimental and control group. Experimental group received pelvic floor muscle training exercise whereas control group received only standard routine care. Structured interviewing tools, pelvic floor muscles strength assessment, antenatal follow up checklist, partograph were used as tools of data collection. The study showed that there was a highly significant statistical difference between the study and control groups in relation to duration of 1st, 2nd and 3rd stage of labor. There was a high statistically significant difference found for the mean cervical dilatation and effacement among the two groups. The study also showed that mothers in the study group had better labour progress than those in the control group. Thus the study concluded that pelvic floor muscle training exercise can be useful to decrease duration of labor.⁵

A cross-sectional study to analyze the knowledge, attitude and practice of exercise during pregnancy among antenatal mothers was conducted at Indira Gandhi Medical College and Research Institute, Puducherry, India in 2015. A total of 200 antenatal mothers who aged between 18-35 years were included in the study. Data were collected using a self-administered pretested close ended questionnaire. Data were analyzed using Statistical Package for Social Sciences (SPSS). The study showed that total mean knowledge score was 20.53 ± 2.08 . 51% felt it was necessary to do exercise during pregnancy. Only 18% were practicing exercise in pregnancy. The study concluded that the knowledge of women on exercise during pregnancy was less than average, and their attitude was favorable. However a very few were actually practicing exercises in pregnancy.⁶

A quasi-experimental study to assess the effect of antenatal exercises on labour outcome among primigravida mothers was conducted at Seethalakshmi Corporation Maternity Centre for experimental group and CTM Centre for control group in 2009-10. Simple random sampling technique was used to select 300 low risk primigravida mothers who were equally divided in each experimental and control group. Observation tools used for labour process included: Observation record on progress of labour (Partograph), Intrapartum variable proforma, Numerical Pain scale, Primigravida's behavioral responses during labour, neonatal variable proforma (APGAR score & presence of birth injuries). The overall mean knowledge score for control group was 5.37 ± 1.21 whereas in experimental group it was 25.11 ± 0.92 . There was a significant statistical difference found between control and experimental group in all the areas of knowledge on antenatal exercise among primigravid mothers ($t = 173.04$, $p<0.001$ level). Comparison of antenatal exercises on labour process showed that 10 (14%) had poor outcome, 46 (62%) had fair outcome and 18 (24%) had good outcome in control group whereas in experimental group 16 (17%) had fair outcome and 79 (83%) had good outcome. The overall mean value for control and experimental group was 12.45 ± 2.51 and 16.42 ± 1.698 respectively and the obtained 't' value is 12.33. at $p<0.001$ level, so there was a significant difference in the outcome of labour process among control & experimental group. The study was concluded that the regular practice of antenatal exercises along with knowledge had enhanced the labour process with good labour outcome which can be adopted by the nurses in their clinical practice.⁷

A descriptive study to assess the knowledge of primigravida mothers regarding antenatal care was conducted at Kadusonnaphalli PHC for rural and Narayanapuram PHC for urban area in 2014. 100 primigravida mothers were selected using convenient sampling technique which was from rural and urban areas. Self prepared a structured interview questionnaire was used for data collection. Majority of 82% primigravida mothers had inadequate knowledge and 18% had moderately adequate knowledge in rural area. In urban area 54% had moderately adequate knowledge and only 10% had adequate knowledge of antenatal care. There was no significant association found between knowledge of primigravida mothers with selected demographic variable. The overall aspects mean knowledge score was 40% with standard deviation 12.78 in rural and in urban 51.90% with standard deviation 14.14. Highest mean knowledge score was found on general information 48% in rural and 61.50% in urban regarding antenatal care. Thus the study concluded that more stress should be given to increase the knowledge of primigravida mothers regarding antenatal care.⁸

A randomized controlled trial was conducted to evaluate the effect of antenatal exercises on pulmonary functions and labour outcome in uncomplicated primigravida women at UCMS & GTB Hospital, Delhi, India in 2015. 122 uncomplicated primigravida in age group of 18-35 years at 24th - 28th week of gestation were randomly allocated into study and control groups. Baseline pulmonary function tests and parameters related to labour outcome were used as tools for data collection. Pulmonary function tests (PFTs) were done for all subjects at 24th week of gestation and after 36th week of gestation. A significant improvement in FEV1, FVC, FEF25-75%, MEF50%, MIF50% and MVV between 24 & 36 weeks was observed in the study group after exercises. In the study group 41.67% patients did not require augmentation compared to 22.95% in the control group. In study group 13.11% patients had meconium stained liquor which was significantly less in comparison to 41% patients in the control group. Mean duration of first, second and third stage of labour was shorter in study group than control group. In study group 96.72% had normal and none had instrumental vaginal delivery compared to 88.52% and 6.6% from control group respectively. Caesarean section rate was 3.3% in study group and 4.9% in control group. Fetal weight gain, birth weight, birth length and head circumference was significantly higher and NICU stay was significantly lesser in study group compared to control group. The study was concluded that antenatal exercises lead to improvement of pulmonary functions and hence labour and neonatal outcomes.⁹

A critical review of the literature examining the effect of exercise on maternal outcome was done in 2006. Literature reviews were done from PubMed (all available years), personal communications, and personal searches of files. Results indicated that exercise during pregnancy is safe and perhaps even reduces the risk of preeclampsia and gestational diabetes. The evidence for weight gain and labor and birth (rates of cesarean sections, duration of labor) was found to be mixed. Unfortunately, much of the researches examining exercise during pregnancy were observational, and the few randomized controlled trials that existed were small and inadequately powered. The study concluded that practitioners should encourage their healthy pregnant patients to exercise. Practical guidelines for recommending exercise to pregnant women were also presented.¹⁰

A quasi experimental study was conducted to evaluate the effectiveness of selected nursing measures on labour outcome among primigravid mothers at Nirmala Hospital, Suryapet in 2015. 40 primigravida mothers were selected using non – probability convenient sampling technique and equally divided into experimental and control group. A structured observational record sheet was used for assess labour outcome. This study revealed that there was high significant difference found in pain at $p < 0.001$ level between study and control group. The study concluded that, clinical implementation of nursing measures usage during antenatal period could be an effective non pharmacological intervention in improving labour outcome.¹¹

A quasi-experimental, clinical trial study aimed to determine the effect of participating in the labor preparation classes on vitality and positive affect during pregnancy and in postpartum period in the pregnant women referred to the Isfahan public health centers was done in 2010. 120 eligible pregnant women since 20 weeks of pregnancy who referred to these centers were selected simply and randomized in two groups (60 in the case and 60 in the control group). Questionnaires of vitality and positive affect toward the labor were used for data collection. There was a significant difference in vitality and positive affect regarding type of delivery before and after intervention and after delivery in case group ($p < 0.0001$). There was no significant difference in vitality and positive affect scores after delivery and after intervention ($p < 0.083$, $p < 0.545$). There was significant difference in vitality and positive affect scores between case and control groups after the intervention and after the delivery ($p < 0.001$, $p < 0.0001$). This study concluded that it could be recommended that all pregnant women should contribute in delivery preparation classes to improve their mood, confidence, vitality toward labor.¹²

Conclusion:-

Various searched studies suggest that there is association between antenatal exercises and labour outcome. Hence, Researcher is interested to assess the effectiveness of antenatal exercises on labour outcome among primi gravid mothers attending maternity services.

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