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A comparative study to evaluate the effectiveness of salt warm water foot bath vs. Epsom salt warm water foot bath in leg edema among antenatal mothers during 3rd trimester

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Abstract

Pregnancy is a very special time for both woman and her partner. Knowing what is happening to woman and her growing baby during the weeks ahead will help the woman and her partner to enjoy this exciting period in their lives. As a lady's body adapts to the adjustments that pregnancy deliver, she will start to evolve to prepare her body emotionally and almost ready for parenthood. A girl's body will trade as dramatically and as unexpectedly because it will for the duration of pregnancy. "A comparative study to evaluate the effectiveness of salt warm water foot bath vs. Epsom salt warm water foot bath in leg edema among Antenatal mothers during 3rd trimester''. Study was undertaken as a partial fulfillment of requirement for the degree of Master of Science in Obstetric and Gynecological Nursing. It was done by Miss Amina Singh Uikey from Pt. Deendayal Upadhyay Memorial Health Science and Ayush University of Chhattisgarh, Raipur, Chhattisgarh.

Keywords: Epsom salt warm water foot bath, methods were, effective in reducing leg edema among antenatal mothers, salt warm water

Introduction

As pregnancy progresses, fluid may accumulate in tissues, usually in the feet, ankles, and lower legs, causing them to swell and appear puffy. Some fluid accumulation during pregnancy is normal, particularly during the 3rd trimester. This condition is called edema. Occasionally, the fingers also have mild swelling. If swelling is more than mild in the hands or if there is swelling in the face, the woman should be evaluated by a doctor. Fluid accumulates during pregnancy because the adrenal glands produce more of the hormones that make the body retain fluids (aldosterone and cortisol). Fluid also accumulates because the enlarging uterus interferes with blood flow from the legs to the heart. As a result, fluid backs up in the veins of the legs and seeps out into the surrounding tissues [1].

Khevna Rameshbhai Macwan 2021 [2], Pregnancy is a very special time for both woman and her partner. Knowing what is happening to woman and her growing baby during the weeks ahead will help the woman and her partner to enjoy this exciting period in their lives. As a lady's body adapts to the adjustments that pregnancy deliver, she will start to evolve to prepare her body emotionally and almost ready for parenthood. A girl's body will trade as dramatically and as unexpectedly because it will for the duration of pregnancy. The nine month journey that a girl and her frame take will make each inner and external adjustment to the girl's frame. It is envisioned that about 75% of women suffer this excessive accumulation of fluid around the legs and ankles during pregnancy. Epsom salt bath acts like an analgesic for the human body. It helps to reduce pain and swelling. Epsom salt is usually to be had in a pharmaceutical form. It is most inexpensive and extra effective in decreasing

oedema. The cost-effective management is administered to scale back, reduces oedema and anxiety associated with care. Roughly, 75% of pregnant women experience oedema, especially by the time they reach their third trimester. Oedema is considered to be worse at some point in summer and at the end of the day. 5-10% time oedema is related to pre-eclampsia. Strive to stay physically active throughout pregnancy to reduce swelling and have a healthy pregnancy [2].

Background

Leg edema is a common physiological problem experienced by antenatal mothers, particularly during the third trimester of pregnancy. It occurs due to hormonal changes, increased blood volume, and pressure exerted by the growing uterus on pelvic veins, leading to venous stasis and fluid retention in the lower extremities. Although leg edema is usually considered a benign condition, it can cause significant discomfort, pain, fatigue, and reduced mobility, thereby affecting the quality of life of pregnant women.

Edema during pregnancy is reported in a majority of women during late gestation and is more pronounced in the third trimester. Prolonged standing, reduced venous return, and sodium retention further aggravate the condition. If not managed appropriately, leg edema may interfere with daily activities and sleep, and in some cases may increase anxiety among expectant mothers regarding maternal and fetal well-being.

Management of leg edema in pregnancy primarily focuses on non-pharmacological interventions, as the use of medications is limited due to concerns regarding fetal safety. Commonly recommended measures include leg elevation, adequate rest, exercise, and hydrotherapy. Warm water foot bath is a simple, cost-effective, and non-invasive intervention that promotes vasodilation, improves circulation, and facilitates relaxation.

Salt warm water foot bath and Epsom salt warm water foot bath are widely used traditional and complementary therapies for reducing edema and promoting comfort. Salt warm water foot bath is believed to enhance osmotic fluid movement, whereas Epsom salt, rich in magnesium sulfate, is known for its anti-inflammatory and muscle-relaxing properties. Several studies have suggested the effectiveness of warm water therapy in reducing edema; however, comparative evidence between salt warm water and Epsom salt warm water foot bath among antenatal mothers remains limited.

Therefore, the present study was undertaken to compare the effectiveness of salt warm water foot bath versus Epsom salt warm water foot bath in reducing leg edema among antenatal mothers during the third trimester of pregnancy.

Ethical Considerations

Ethical clearance was obtained from the concerned Institutional Ethics Committee of the Government College of Nursing Bilaspur, prior to the conduct of the study. Written informed consent was obtained from all antenatal mothers after explaining the purpose and procedure of the study. Confidentiality and anonymity of the participants were maintained throughout the study. The participants were informed about their right to withdraw from the study at any time without any penalty. The study interventions were non-invasive and posed no harm to the mother or fetus.

Specific Objectives

- To assess the leg edema among antenatal mothers.
- To compare the effectiveness of salt warm water foot bath and Epsom salt warm water foot bath among antenatal mother during 3rd trimester.
- To find out the association between salt warm water foot bath and Epsom salt warm water foot bath with their sociodemographic variables on reduction of leg edema among antenatal mother during third trimester.

Research Hypotheses

- **H_1:** There will be significant difference between salt warm water food bath and Epsom salt warm water food bath in leg oedema among antenatal mother during 3rd trimester.
- **H_2:** There will be significance association between Salt warm water foot baths in leg edema among antenatal mother during 3rd trimester with their selected socio demographic variables.
- **H_3:** There will be significance association between Epsom Salt warm water foot baths in leg edema among antenatal mother during 3rd trimester with their selected socio demographic variables.

Methodology

- **Research Approach:** A quantitative research approach was adopted for the present study.
- **Research Design:** A comparative research design was used to evaluate the effectiveness of salt warm water foot bath and Epsom salt warm water foot bath on leg edema among antenatal mothers during the third trimester of pregnancy.
- **Setting of the study:** The study was conducted in the selected antenatal clinics / hospitals.

Population

- **Target Population:** Antenatal mothers.
- **Accessible Population:** Antenatal mothers in the third trimester of pregnancy who attended the selected antenatal clinics during the period of data collection.

Sample and Sample Size

The sample consisted of 100 antenatal mothers in the third trimester of pregnancy.

- **Experimental Group I:** 50 antenatal mothers (Salt warm water foot bath).
- **Experimental Group II:** 50 antenatal mothers (Epsom salt warm water foot bath).

Sampling Technique

Non-probability purposive sampling technique was used to select the samples.

Tool for data collection

A standardized Erin edema scale and (e.g., pitting edema scale or measurement scale) was used to assess the level of leg edema among antenatal mothers.

1+	2mm depression, barely detectable. Immediate rebound.
2+	4mm deep pit. A few seconds to rebound.
3+	6mm deep pit. 10-12 seconds to rebound.
4+	8mm: very deep pit. >20 seconds to rebound.

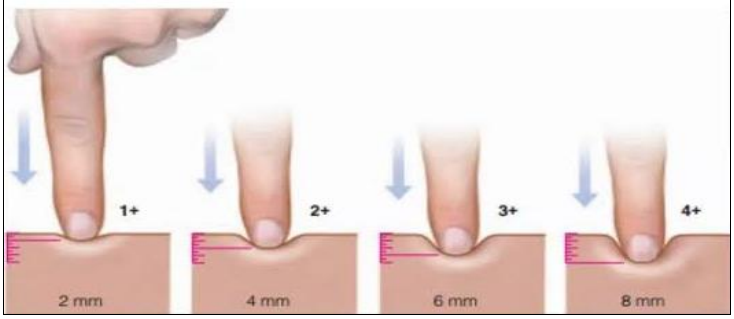

Fig 1: Grading scale of pitting edema based on depth and rebound time

Experimental Group I
Salt warm water foot bath was administered to antenatal mothers once daily for a specified duration.

Experimental Group II
Epsom salt warm water foot bath was administered to antenatal mothers once daily for a specified duration. (Yahan water temperature, duration, number of days add karna journal ke liye strong hota hai).

Data Collection Procedure
After obtaining ethical clearance and informed consent from the participants, pretest assessment of leg edema was carried out for both experimental groups. The respective interventions were administered to the participants. Post-test assessment of leg edema was conducted after the intervention to evaluate the effectiveness of salt warm water foot bath and Epsom salt warm water foot bath.

Plan for Data Analysis
The collected data were analyzed using descriptive and inferential statistics to evaluate the effectiveness of the interventions and to find the association between post-test level of leg edema and selected socio-demographic variables.
Comparison of score between pre-test and post-test through mean score, mean %, and standard deviation.

Report Writing
The findings of the study were organized, analyzed, interpreted, and presented in the form of tables, figures, and graphs, followed by discussion, conclusion, and recommendations.
Kaori Morimoto 2021 [4], approximately 70% of women present with clinical edema at some point during pregnancy. One of the common causes of lower extremity edema during pregnancy is an increase in hydrostatic pressure. As a normal physiologic change in pregnancy, total body water increases by 6 to 8 liters. As pregnancy progresses, fluid may accumulate in tissues, usually in the feet, ankles, and lower legs, causing them to swell and appear puffy. Some fluid accumulation during pregnancy is normal, particularly during the 3rd trimester. This condition is called edema. Occasionally, the fingers also have mild swelling. If swelling is more than mild in the hands or if there is swelling in the face, the woman should be evaluated by a doctor. Fluid accumulates during pregnancy because the adrenal glands produce more of the hormones that make the body retain fluids (aldosterone and cortisol). Fluid also accumulates because the enlarging uterus interferes with blood flow from the legs to the heart. As a result, fluid backs up in the veins of the legs and seeps out into the surrounding tissues [4].

Discussion
Comparison of pre-test and post-test score through mean, mean % and SD.
The study showed that leg edema score decreased after application of salt warm water foot bath in both experimental groups among antenatal mothers.
In Experimental Group 1, the pre-test mean score was higher than post-test mean score, indicating reduction in leg edema after intervention. Mean %, and standard deviation were also reduced in post-test, showing effectiveness of salt warm water foot bath.
In Experimental Group 2, the pre-test mean score was also higher than post-test mean score. Reduction in mean score, mean % and SD indicated improvement in leg edema after Epsom salt warm water foot bath.
Overall findings revealed that both interventions were effective in reducing leg edema among antenatal mothers.

Results
Depicts that there was a mild difference in the effectiveness of salt warm water foot bath and Epsom salt warm water. The Epsom salt warm water is more effective than the salt warm water footbath method on reduction of leg edema among ante natal mothers in selected hospital Bilaspur Chhattisgarh.

Conclusion

Paired 't' test for assessing significant difference between pre-test and post-test skill score section. To find the association between pre-test levels of Leg edema with selected socio demographic variables, obstetric history and by chi-square test.

The findings of the paired t-test revealed that both the experimental group I (salt warm water) and experimental group II (Epsom salt warm water) showed a highly significant reduction in leg edema after the intervention. The calculated t-values (20.207 and 14.304) were much higher than the table value at 0.05 level of significance (1.98), indicating a significant difference between the pre-test and post-test scores. Therefore, the null hypothesis (H_0) was rejected, and it was concluded that warm salt water and Epsom salt foot bath methods were effective in reducing leg edema among antenatal mothers.

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