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A study on the effectiveness of structured teaching programme on knowledge regarding use of body mechanics among pregnant women, selected hospital, Dehradun

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Abstract
Objectives
- To assess the pre-test knowledge level on use of body mechanics among pregnant women.
- To develop structured teaching programme on use of body mechanics among pregnant women.
- To evaluate the effectiveness of structured teaching programme on use of body mechanics among pregnant women.
- To determine the association between the posttest mean score and selected demographic variables.

Methodology: A Quantitative research approach was adopted for present study. Total 60 Pregnant women were selected through convenient sampling technique. Data was collected by Demographic Performa and self-reported interview schedule. The data was analyzed by using descriptive and inferential statistics.

Result: The mean post-test score of knowledge regarding body mechanics 17.8(SD=3.6) was higher than the mean pretest score of knowledge regarding body mechanics 10.4 (SD=2.9). The mean difference shown was 7.4.The 't'value was 15.8 and found statistically significant at ($p<0.05$) level of significance. It shows the real difference exist between the pretest and posttest score of knowledge. It indicate that increase in knowledge regarding body mechanics during pregnancy was not by chance but because of intervention. There was significant association found between the pretest levels of knowledge score with education. Hence, it was interpreted that teaching on use of proper body mechanics was significantly effective in increasing the knowledge of pregnant women.

Conclusion: It can be concluded that the administration of body mechanics teaching program was effective as a method to enhance the knowledge of pregnant women.

Keywords: Body mechanics, effectiveness

Introduction

The miracle of life is something most of us will experience in our life time. The process before actually giving birth, I think is the hardest part of the entire scenario of childbearing. This amazing experience is something that can make the individual who are involved in the process change in so many ways [1].The gestation period is characterized as a time of alteration in women's lives, because, beyond the physical and physiological change, changes are also observed in emotional state. Thus, there are several alterations that occur in the pregnant organ systems [2] pregnant woman undergoes many physiologic alterations which are entirely normal, including cardiovascular, hematologic, metabolic, and renal and respiratory system. Levels of progesterone and oestrogens rise continually throughout pregnancy, suppressing the hypothalamic axis and also the menstrual cycle [3]. Biomechanical changes during pregnancy leads to postural changes, various musculoskeletal changes or back pain. Commonly noted changes are pelvic girdle pain and low back pain. These changes are experienced by pregnant women during pregnancy globally [4]. Backache is a common disorder that is not restricted to a particular trimester but may span all the three trimesters and continue into the postnatal period. It is caused by the increased weight of the growing foetus and uterus pulling forward on the lower back muscles. Typical factors aggravating the back pain in pregnancy includes standing, forward bending, lifting and walking [5]. The incidence of pregnancy-related Low back pain (LBP) rates range from 25% to 90%, with most studies estimating that 50% of pregnant women will suffer from Low back pain (LBP). One third of them will suffer from severe pain, which will reduce their quality of life.

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The majority of women are affected in their first pregnancy. Eighty percent of women suffering from LBP claim that it affects their daily routine and 10% of them report that they are unable to work [6]. During pregnancy several things occur that work against maintaining correct alignment. For one, the weight of the baby causes the lower back sway as the centre of gravity moves forward [7]. Good posture increases the room for the baby to grow and develop. This puts less strain on pregnant women and they will carry their pregnancy far easier. Poor posture decrease the room which baby has to move and will cause excess tightening of some muscle groups causing posture to worsen. Poor posture will increase the lower back and hip pain during pregnancy [8]. Body mechanics is the efficient use of the body as a machine and as a means of locomotion. It involve three basic elements: Body alignment (posture), balance (stability) and coordinated body movements. Proper body alignments enhance the lung expansion and it promotes the efficient circulatory, renal, gastrointestinal fuctions [9]. Posture is the position in which the woman hold her body while standing, sitting or lying down. Good posture during pregnancy involves training body to stand, walk, sit and lie in position where the least strain is placed on the back [10]. An awareness of the consequences of not using good body mechanics may motivate the pregnant women to learn good habits. The consequences of poor body mechanics are multiple. The musculoskeletal system is particularly affected by poor alignment. Fatigue and muscle strain occur when the work of maintaining balance is not evenly divided among opposing muscle groups [11].

Research statement
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Hypothesis
- There would be significant increase in post- test mean knowledge score among pregnant women on use of body mechanics.
- There would be significant association between knowledge regarding use of body mechanics and selected demographic variables of pregnant women.

Methodology
A Qunatitative, Pre-experimental, one group pretest posttest design for knowledge regarding use of proper body mechanics was used as study design. The study was conducted in Obstetrics and Gynaecology O.P.D of Himalayan hospital Dehradun, Uttarakhand. Convenient sampling technique was used to select the study subject. Data was collected from 60 pregnant women by using the structured knowledge questionnaire. Pre-test was conducted

from the selected subject. with the help of tool and structured teaching program is delivered. On the 8th day post-test was conducted form the sample by using same tool. Knowledge regarding use of body mechanics among pregnant women was assessed by using descriptive and inferential statistics.

Analysis and interpretation

Section-I: Frequency and percentage of demographic data

Table 1: Frequency and percentage distribution of demographic characteristics of study participants N=60.

S. No.	Demographic variable	Frequency (f)	Percentage (%)
1.	**Age of mother**		
	• 18-26	43	71.7%
	• 27-35	17	28.3%
2.	**Education**		
	• No formal education	0	0%
	• Primary	15	25%
	• Secondary	29	48.3%
	• Graduate	13	21.7%
	• Postgraduate	03	5%
3.	**Occupation**		
	• Home-maker	53	88.3%
	• Govt employee	1	1.7%
	• Private Job	6	10%
	• Labourer	0	0%
4.	**Type of family**		
	• Nuclear	16	26.6%
	• Joint	43	71.7%
	• Extended	1	1.7%
5.	**Area of residence**		
	• Rural	60	100%
	• Urban	00	
	• town	00	
6.	**Gravida**		
	• Primigravida	22	36.7%
	• Multigravida	36	60%
	• Grand-multipara	1	1.7%
	• Grand-multigravida	1	1.7%
7.	**History of abortion**		
	• Yes	6	10%
	• No	54	90%
8.	**Previous exposure to any information regarding body mechanics**		
	• Yes	2	3.3%
	• No	58	96.7%

Table No.1 Shows that most of 43 (71.7%) study participants were in the age group between 18-27 years. Approximately 43.8%were secondary educated. Majority of pregnant women (83.3%) were home maker. Most of pregnant women (71.7%) belonged to joint family. All (100%) were residing in the rural area. Most of the pregnant women (60%) were multigravida. Majority of women (90%) were having history of abortion. Majority of pregnant women (96.7%) were having no previous exposure to any information regarding body mechanics.

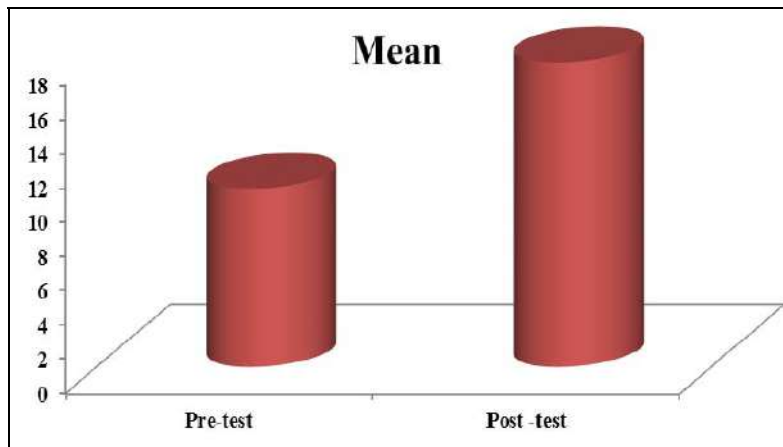**Analysis of knowledge of proper body mechanics during pregnancy**

Table 2: Effectiveness of structured teaching program on use of proper body mechanics during pregnancy N=60

Group	Pretest Mean± SD	Post-test mean± SD	t-cal value	p value
One group pre-test post-test	10.4±2.9	17.8±3.6	15.8	<.00001

Independent t-test df=59 t $_{tab=2.00}$ $_{p<0.05}$

Table no 2: Depicts that the pre-test knowledge score was 10.4±2.9 which had increased to post-test knowledge score 17.8±3.6. Independent sample 't' test was calculated to find the significant difference between means of pre-test and post-test knowledge scores. The calculated 't' value was 15.8 which is more than the table value 2.00(df=59 at $p<0.05$) Hence the null hypothesis was rejected and research hypothesis was accepted. This significant improvement in the knowledge can be attributed to the intervention.


Fig 3: Bar diagram showing the Effectiveness of structured teaching program on knowledge regarding use of proper body mechanics among pregnant women.

Table 3: Frequency and percentage distribution of knowledge level of pregnant women on proper use of body mechanics N=60.

Aspect	Category	Pre-test frequency (f)	%	Post-test frequency (f)	%
Poor	7-13	50	83.3%	05	8.3%
Good	14-20	10	16.7%	42	70%
Very good	21-27	0	0%	13	21.7%

Table 3: Depicts that in the pre-test majority of pregnant women 50(83.3%) were having poor knowledge on proper use of body mechanics during pregnancy. After getting intervention in post-test most of 42 (70%) pregnant women were having good knowledge on proper use of body mechanics. This significant improvement in the knowledge can be attributed to the intervention.
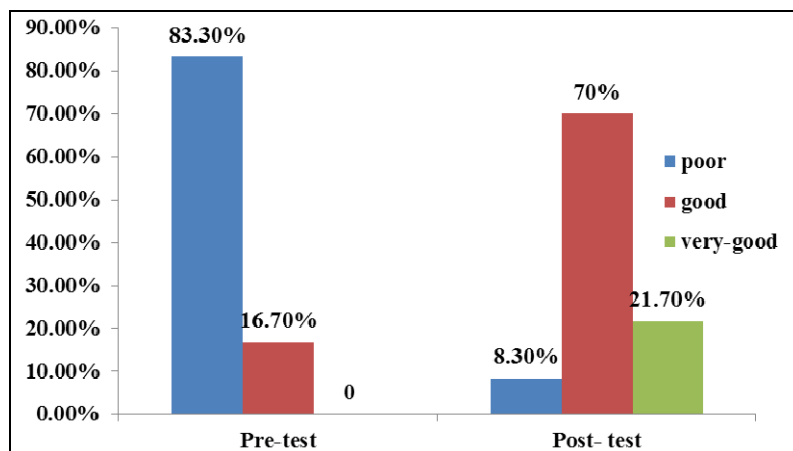
Fig 4: Bar diagram showing the Frequency and Percentage distribution of knowledge level of pregnant women on proper use of body mechanics

Table 4: Association between pre intervention knowledge score with selected demographic variables N=60.

S.N.	Demographic variable	Df	Below median (<10)	At or above median (>10)	Chi-square	p-value
1.	**Age of Mother** 18-26 27-35	1	20 4	23 13	1.809	0.17[#]
2.	**Education** No formal education Primary High secondary Graduate Postgraduate	3	0 12 11 01 00	0 3 18 12 03		0.0003[*]
3.	**Occupation** Home maker Govt employee Private job Labourer	3	24 0 0 0	29 1 6 0	_____	0.09[F]
4.	**Type of family** Nuclear Joint Extended	2	06 18 0	10 25 1	_____	>0.9999[F]
5.	**Area of residence** Rural Urban Town	2	24 00 00	36 00 00	_____	>0.9999[F]
6.	**Gravida** Primigravida Multigravida Grand multipara Gransmultigravida	3	7 15 1 1	15 21 0 0	_____	0.28[F]
7.	**History of abortion** Yes No	1	2 22	4 32	0.123	0.725[#]
8.	**Previous exposure to any information regarding body mechanics** Yes No	1	0 24	2 34		0.5119[F]

* = Significant $p<0.05$ level of significance
# = Yates Correction
F = Fisher exact test

Table No 3: depicts that the association between pre intervention knowledge score with selected demographic variables. Since all data were categorical in nature, chi-square test was performed to find association. The result showed that there is no statistically significant association between knowledge score and their selected demographic variable in accordance with age (1.089), occupation, type of family, area of residence, gravid, history of abortion (0.123). Only one variable education (0.0003) were shows the significant association.

Discussion
The finding of the study revealed that majority (76.6%) of pregnant mother were having good knowledge (21.7%) were having very good knowledge (1.7%) were having poor knowledge on use of body mechanics during pregnancy. The finding of the study was supported by study done by francisco moisés alvino de almeida *et al*. 2015 conducted a study on analysis on knowledge of pregnant women on activity of daily living reveals that 67.6% were having very good knowledge 30.7% were having good knowedge and 1.7% were having poor knowledge for correct postion in activity of daily living.

Conclusion
Based on the finding of the study, It is concluded that most of the mother had good knowledge regarding use of proper body mechanics after implementation of structured teaching program. The finding shows that the mean post-test score was more than the mean pretest knowledge score of pregnant women. So the structured teaching program is effective for pregnant women regarding use of proper body mechanics.

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