



RESEARCH ARTICLE

Perception of pregnant mothers attending antenatal clinic on usefulness of prenatal exercise in Osogbo, Osun state, Nigeria

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Abstract

Background: Antenatal education programs including prenatal exercises are designed by midwives in many hospitals in Nigeria. It is believed that exercises help to improve health and enhance safe delivery of pregnant mothers but researches in Nigeria are yet to challenge the efficacy of this approach.

Aim: To examine the usefulness of prenatal exercise as perceived by pregnant mothers attending antenatal clinic of Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital LTH Osogbo Osun State.

Methods: A descriptive survey research design was used for this study. The population for this study comprises of pregnant mothers attending antenatal clinics both in LAUTECH Teaching Hospital Osogbo and the Community LAUTECH Annex Located at Atelewo Health Centre Osogbo in Osun State. Convenient sampling technique was

used to select 500 participants in both antenatal clinics. Data was collected for six weeks in the two antenatal clinics. Questionnaires in Likerts Scale format was used to examine the perception of the perception of the participants on this study. The statistics used for analysis of data were percentages and chi-square at 5% level of significance.

Results: Study revealed that there were significant relationships between perceptions of pregnant mothers on various usefulness of prenatal exercise. The variables used as usefulness or benefits of exercise are faster labour, preparation for labour endurance, reduction in weight gain, relieve of fatigue, swelling and back pain, increased blood circulation and prevention of gestational diabetes, decreased use of labour medication, reduced preterm labour and promotion of sleep

Conclusion: It was concluded and recommended that aerobic dance should be done in late gestation to test the effect of maternal exercise on foetal activity. Low impart aerobic such as walking which is being performed by the participants in this study should be recommended by the health care giver to all pregnant mothers to strengthen the pelvic joint.

Keywords: Perception, pregnant mothers, antenatal clinic, usefulness, prenatal exercise

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Introduction

During pregnancy the body experience dramatic physiological and psychological changes which is natural and to remain healthy, the pregnant woman must indulge in regular physical activities call exercise.¹ The professional health workers need to carefully design physical exercise programme to enable the pregnant woman

remain healthy. In country like Brazil, her Ministry of Health stipulates that in addition to consultation and prenatal care, breathing and relaxation techniques should be taught for better control of labour and general well-being.² Different exercise programmes are available for pregnant mothers; these exercises include aerobic exercises such as dancing, walking and swimming. Another type is Kegel exercise; this involves tightening of pelvic muscles to control urine flow.³

Green⁴ also discussed about breathing and relaxation exercises that were widely used and were most successful for the relief labour pain and to enhance better emotional well-being. The health of the mother and that of the foetus is improved when the mother performs some simple exercises during pregnancy. Exercise has been known scientifically and physically to promote blood circulation to the mother and the foetal vital organs such as the brain, liver and heart etc; exercise also improve pelvic bone and muscle tone thus enhancing normal safe delivery of baby during labour.⁵

Exercise is an activity requiring physical effort done to improve health, it is a physical or mental activity that is done to stay healthy or become stronger. Exercise session in antenatal clinic should be designed to stimulate interest in the physical changes occurring to promote body awareness and to facilitate physical and mental relaxation. Prenatal classes held early in pregnancy allow for advice and discussion relating to rest and work activities anticipated postural change and relief of common discomforts sessions covering position for labour and postnatal exercises are more appropriate during the third trimester of pregnancy.⁶

Moderate exercise during pregnancy improves cardiovascular fitness, limits weight gain, improves attitude & mental state, easier and less complicated birth and a speedy postnatal recovery.⁷ Prenatal exercise prevents Gestational diabetes.⁸ The risk of preterm labour may be

reduced in nulliparous women who exercise regularly. Varney posited that the pregnant woman should be advised to exercise for physical fitness during the prenatal visit, they should be asked about daily routines, recreational and work related exercises and plans for changes during pregnancy.⁹ There are foetal benefits from maternal exercise in pregnancy which include decreased growth of the adipose tissue, improved stress tolerance and advanced neuro-behavioural relaxation.⁷ Furthermore, general benefits of exercise during pregnancy are relief of pain strengthened muscles in preparation for labour and support for loosened joints, enhanced circulation, increased flexibility, increased capacity (endurance), increased energy level, combats fatigue, decreases muscle tension, promotes relaxation and a positive self-image.¹⁰ Foot & leg exercises, and pelvic tilting can be performed in sitting or half-lying positions, whereas trans-versus and pelvic floor exercises can be carried out in any position.¹¹

Heggard states that women who practiced more than one type of sports or leisure time physical activity had 24% of reduced risk of preterm delivery, which compared with women with no sports activity.¹² It must be noted that before asking a group to perform antenatal exercise on the floor, the correct way of getting down and up again must be demonstrated side-lying in the coma position with pillows under arm and knee is usually comfortable position in pregnancy. The pregnant mothers should get up from lying by bending the knees, rolling on to one side then using the arms to push up into a sitting or kneeling position to prevent strains on both the back and the abdominal muscles. Muscles of good tone are more elastic and will regain their former length more efficiently and more quickly after being stretched than muscles of poor tone. Exercising the abdominal muscles antenatally will ensure a speed to normal postnatally, effective pushing in labour, and the lessening of back ache in pregnancy.¹³



Exercise during pregnancy are of utmost concern for most medical care giver, educators, the general public as well as pregnant mothers and their family.¹⁴ Regular and moderate exercise in early pregnancies is healthy for the mothers and their babies.^{7,15,16} Mother's health physiotherapist is the ideal choice to teach the physical skills required or parenthood.¹⁷ However in areas where there is no physiotherapist available, midwives may find themselves responsible for physical preparation as well as parent education in antenatal classes or as one-to-one basis.⁵

STATEMENT OF THE PROBLEM

Prenatal exercise is of benefit to every pregnant mother. Dianne & Margaret posited that exercise can reduce the length of labour, shorten the recovery time and even help with post-partum weight management.⁵ The physiotherapists in the hospital always come to the clinic as early as possible but they usually meet only few pregnant mothers because they come late to the clinic for the exercise as they see little or no need for prenatal exercise. The purpose of this study therefore is to know how pregnant mothers perceive usefulness of antenatal exercise as it is being performed in the antenatal clinics of LAUTECH Teaching Hospital Osogbo Osun State.

METHOD AND MATERIAL

Descriptive survey research design was used for this study. This design was chosen because it helps to describe, examine, analyze, interpret and generalize the result of the findings of the study.

The study sought answers to the following research Hypotheses:

Hypothesis 1 (HO₁): Faster labour and preparation for labour endurance is not perceived as significant usefulness of prenatal

exercise by pregnant mothers attending antenatal clinic in LAUTECH Teaching Hospital, Osogbo.

Hypothesis 2 (HO₂): Reduction in weight gain is not perceived as significant usefulness of prenatal exercise by pregnant mothers attending antenatal clinic in LAUTECH Teaching Hospital, Osogbo.

Hypothesis 3 (HO₃): Relief of fatigue, swelling and back pain is not perceived as significant usefulness of prenatal exercise by pregnant mothers attending antenatal clinic in LAUTECH Teaching Hospital, Osogbo.

The population for the study comprised of pregnant mothers. Inclusion criterion was pregnant women between the age of 18-40 years in any trimester who comes for their regular antenatal visits to both in LAUTECH Teaching Hospital and the Community LAUTECH Annex located at Atelewo Health Centre Osogbo in Osun State.

A total sample size of five hundred (500) participants were taken for this study. Convenience simple sampling technique was used to select the participants on each clinic day. Convenience sampling technique was considered appropriate because each pregnant woman attends the clinic on different days of the week and the pregnant mothers have different gestational age.

INSTRUMENT: A self developed structured questionnaire according to the variables that were tested in the hypotheses of this study. The questionnaire has two sections A and B, section A dealt with the demographic data of the participants with some questions related to the study. Section B sought information on the variables (usefulness of prenatal exercise) selected for the study. The questionnaire was in close-ended form in line with the modified Likerts-type. The responses were on a four point ratings of Strong Agree (SA) -4, Agree (A)-3, Disagree (D)-2 and Strongly Disagree (SD)-1. The instrument

(questionnaire) was validated by the researcher's supervisor, experts in the Department of Human Kinetics and Education, University of Ibadan.

The corrected version of the instrument was administered to thirty (30) pregnant mothers attending antenatal clinic in General Hospital Osogbo Osun State outside the ones selected for samplings. The data collected were subjected to analysis using Cronbach alpha coefficient (R) in order to determine the internal consistency and the degree of relationship of the test items. The reliability coefficient was found to be 0.77

Pre-Testing of the instrument: The validated instrument was subjected to a pretest using (30) participants in antenatal clinic of general hospital Asubiaro Osogbo, Osun state, this enabled the researcher to test run the instrument in order to be acquainted with the procedures and the probable constraints the study would be faced with. This also assisted the researcher in determining the number of research assistants that were used in the real study.

Procedure for data collection: Pregnant mothers were given questionnaire on weekly basis for six different weeks until 500 participants were sampled. The researcher collected a signed letter of introduction from the head, department of human kinetics and Health Education, University of Ibadan and this was used for identification purpose during the data collection phase. The researcher administered the questionnaire with the help of ten (10) trained research assistants who were also nurse - midwives in the antenatal clinic in LAUTECH teaching hospital Osogbo Osun State. The questionnaires administered in each clinic day were collected on the spot to ensure high return and usability.

Procedure for Data Analysis

The completed questionnaires were collected, coded and analyzed using both descriptive and inferential statistics. Respective statistics of frequency counts, means and percentages were

used in analyzing section A of the questionnaire which dealt with the demographic characteristics of the participant while inferential statistics of chi-square (X^2) was used to test the hypotheses formulated for the study at 0.05 alpha level.

ETHICAL CONSIDERATION

Approval certificate was collected from the ethical committee of LAUTECH Teaching Hospital (LTH) in 2006 to allow the researcher to carry out the study. This clearance certificate was renewed in 2012 by the ethical committee in LTH. The participants consent was sought before collecting the data and they all agreed to fill the questionnaire. Names of the participants were not used for confidential purpose.

RESULTS

The study indicated the age of respondents. 314 (62.8%) of the total respondents were within the range of 16–25 years, 181 (36.2%) were within the age range of (36–45) years and 41(8.2%) fall into group of 46 years and above. The results further revealed that 273(54.5%) of the total respondents were Christians 226 (45.2%) were Muslims while 1 (0.2%) of the total identified with the traditional religion. Educational level of the respondents showed that 67 (13.4%) of the total respondents had no formal education. 62 (12.4%) had primary school certificate 112 (22.4%), 162(32.4%) went to secondary school while 67 (19.4%) had tertiary level of education.

Responses of the respondents on parity revealed that 93 (18.6%) of the total respondents have no child before the recent pregnancy. 88 (17.6%) have one child while 100 (20.0%) of the total respondents have two children. 93 (18.6%) pregnant mothers have three children previously. 92 (18.4%) out of the total respondents have four children while 34 representing 6.8% of the total respondents had more than four children, despite the fact that there is information education and communication (IEC) on family planning. Result showed that 373 (74.6%) had been performing



prenatal exercises during pregnancy while 127 representing 25.4% of the total respondents did not (See table 1). Results showed the reason for performing exercise at home by pregnant mothers. The results reveal that 376(75.2%) of the total respondents had no response, 44(8.8%) said that antenatal exercise is too rigorous. 55(11.0%) revealed that antenatal exercise wastes time while 25 (5%) showed that antenatal exercise is not properly performed at home (See table 2).

The results revealed that 90 (18%) had no response. 294 (58.8%) want prenatal exercise to be performed by the expert while 116 representing 23.3% of the total respondents did not prefer expert to perform exercise for them (See table 3). Findings showed that there was significant relationship in faster labour and preparation for labour endurance as perceived by pregnant mothers on usefulness of prenatal exercise (See table 4). The result revealed that reduction in weight gain was perceived as significant usefulness of prenatal exercise by pregnant mothers (See table 5). The result revealed that prenatal exercise was perceived by pregnant mothers attending antenatal clinic in LAUTECH Teaching Hospital, Osogbo as significant to the usefulness in relief of fatigue, swelling and back pain (X^2 critical = 12.59, X^2 calculated = 14.39) (See table 6).

DISCUSSION

This study was carried out on perception of pregnant mothers attending antenatal clinic in LAUTECH teaching Hospital Osogbo, on usefulness of prenatal exercise. The total number of participants for our study was 500. 62.8% of them were within the age range of 16–25 years, 36.2% were within the age range of 36–45 years and 8.2% fall into group of 46 years and above. The result shows that 54.5% were Christians, 45.2% were Muslims while 0.2% belong to traditional religion. Educational level of the respondents

shows that 13.4% of the total respondents had no formal education, 12.4% had primary school certificate, 32.4% went to secondary school and 19.4% had tertiary education.

The awareness of the usefulness of prenatal exercise was assessed, using a self administered questionnaire and findings showed that it was positive. Similar study carried out among pregnant women in attending antenatal OPD M by Sarfraz et al.,³ showed 95.2% of the women agreed that physiotherapy has positive role in ante natal care although only 30% were currently following the exercise programme. A study conducted by Rosediani et al.,¹⁸ found that the pregnant women attending antenatal Clinic in Universiti Sains Malaysia Hospital, Malaysia has good knowledge, attitude and practice about towards Pelvic Floor Muscle Exercise. These findings are in agreement with the results of the present study.

The present study revealed that majority of the respondents preferred taking antenatal exercises in the clinic where there are experts to direct them as shown in tables 2 and 3 which is supported by Dianne and Margaret,⁵ they explained that in the absence of physiotherapist midwives may find themselves responsible for physical preparation as well as parent education in antenatal classes.

The result of this study showed that there was significant relationship in faster labour and preparation for labour endurance as perceived by pregnant mothers on usefulness of prenatal exercise. This was in line with Clapp who reported that prenatal exercise increased flexibility and maintained aerobic capacity needed for labour endurance.⁷ Evidence from Green's research highlighted that breathing and relaxation exercises were widely used by women who gave birth in six maternity units in southeast England and were most successful for those who had expected them to be so.⁷



The study also revealed that reduction in weight gain was perceived as significant usefulness of prenatal exercise by pregnant mothers. The study of Ana et al about water exercise and quality of life during pregnancy in Brazil revealed that agreed that the practice of water aerobics benefitted them and the quality of life was high.¹⁹ Findings further revealed that there was no association between practice of water aerobics and quality of life. Our study did not support the assertion of Adegbesan & Roberts⁷ that the goal of exercise should never be to curb weight gain but to increase the overall feeling of the well being.

This study revealed that prenatal exercise was perceived by pregnant mothers attending antenatal clinic in LAUTECH Teaching Hospital, Osogbo as significant to the usefulness in relief of fatigue, swelling and back pain. These findings are in agreement with the results of Sarfraz et al.,³ that pregnancy exercise program confers many benefits, and can improve overall physical fitness and relieve some of the discomforts associated with pregnancy. Factors associated with women's perceptions of the safety of physical activity in pregnancy were evaluated and it was found that women perceive physical exercise as beneficial because they believe it helps control blood glucose levels, minimizes weight gain, improves energy efficiency and mood, makes childbirth easier and contributes towards fetal health.³ EBSCO Host Library on Pregnancy Guides states that exercises in pregnancy fights pregnancy fatigue, improves sleep, conquers pregnancy constipation, gives your back the back-up it needs, improves your mood, diminishing feelings of worry and anxiety, guard against gestational diabetes, have an easier labor, speed postpartum recovery and make a healthy baby. Lastly, stretching out the body is good, especially in the case of muscle cramps-particularly in the leg, it can also help to uncover tension, warding off cramps and sore muscles.²⁰

The strength of our study was that sample size was large enough, though for generalizing the results sample should have been taken from other tertiary hospitals. Data was primarily collected by the researchers themselves, including trained research assistants and refusal rate was negligible. Our limitation was exclusion of primi-gravida.

The finding of the study reveals that intervention in the form of handbills and/or seminars on the relevance of all pregnant participating in regular prenatal exercise for creating awareness.

RECOMMENDATION

The following recommendations were made on the basis of the findings of this study:

- There should be increased awareness on the usefulness of prenatal exercise to pregnant women.
- Pregnant mothers should be encouraged to walk around some little distances at home as a form of exercise, since this had been recommended in the past for the pregnant mothers in Nigeria; it can also be recommended for future use.
- Squatting as an aspect of yoga during pregnancy should be done by pregnant mothers to help increase the mobility of the pelvic joints and to strengthen the legs.

CONCLUSION

It was observed in this study that regular exercises in pregnancy were useful and of great benefit to both mother and foetus. Psychological usefulness of physical exercise is encouraging and low impart aerobic such as walking which is being performed by the participants in this study should be recommended by the health care giver to all pregnant mothers to strengthen the pelvic joint. Physiotherapist or other experts on exercise can be recommended to attend antenatal clinic with



the pregnant mothers as revealed in this study that the participants (58.8%) preferred the exercise to be performed for them by the experts. Having carried out the statistical analysis, it is hoped that researcher shall be in a position to employ the result obtained to draw some useful conclusions about the pregnant mothers' perception of usefulness of prenatal exercise in LAUTECH teaching hospital Osogbo and its annex in Osun state.

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ANNEX

Table 1: Frequency distribution of respondents on previous performance of exercise during pregnancy. N = 500

Exercise performance in pregnancy	Respondents	Percentage (%)
Yes	373	74.6
No	127	25.4
Total	500	100.0

Table 2: frequency distribution of the pregnant mothers on the preferences for exercise performance at home. (N = 500)

Response	Respondent	Percentage (%)
No response	376	75.2
Antenatal exercise is too rigorous	44	8.8
It wastes time	55	11.0
Antenatal exercise is not performed well	25	5.0
Total	500	100.0

Table 3: Frequency distribution of the pregnant mothers on preferences for the experts to perform exercise for them.

Response	Respondents	Percentage (%)
No response	90	18.0
Yes	294	58.8
No	116	23.2
Total	500	100.0

Table 4: Showing the significant positive relationship in faster labour and preparation for labour endurance as usefulness of prenatal exercise as perceived by pregnant mothers.

Variable	SD	D	A	SA	Total	X ² Cal	Df	P
V ₁	13 2.6%	69 13.8%	252 50.4%	166 33.2%	500 100.0%	61.447	9	.000
V ₂	30 6.2%	99 19.8%	211 42.2%	160 32.0%	500 100.0%			
V ₃	16 3.2%	39 7.8%	275 55.0%	174 34.8%	500 100.0%			
V ₄	16 3.2%	38 7.6%	272 54.4%	174 34.8%	500 100.0%			
Total	75 3.8%	245 12.3%	1010 50.5%	670 33.5%	2000 100.0%			



Table 5: Showing the significant relationship between reduction in weight gain and Usefulness of prenatal exercise as perceived by pregnant mothers.

Variables	SD	D	A	SA	Total	X ² Cal	Df	P
V ₁	21 4.2%	26 5.2%	232 46.4%	221 44.2%	500 100.0%	36.087	3	.000
V ₂	28 5.6%	73 14.6%	246 49.2%	153 30.6%	500 100.0%			
Total	49 4.9%	99 9.9%	478 47.8%	374 37.4%	1000 100.0%			

Table 6: Showing the significant relationship between relief of fatigue, swelling and back Pain and usefulness of prenatal exercise as perceived by pregnant mothers.

Variable	SD	D	A	SA	Total	X ² Cal	Df	P
V ₁	10 2.0%	102 20.4%	203 40.5%	185 37%	500 100.0%	14.319	6	.026
V ₂	18 3.6%	78 15.6%	220 44.0%	184 36.8%	500 100.0%			
V ₃	23 4.6%	113 22.6%	200 40.0%	164 32.8%	500 100.0%			
Total	51 3.4%	293 19.5%	623 41.5%	533 35.5%	500 100.0%			