Nigerian Journal of Health Promotion
ISSN: 0995-3895
Vol. 10, 2017

Benefits of Prenatal Exercise as Perceived by Pregnant Women Attending Antenatal Clinic in Federal Teaching Hospital Abakaliki (FETHA)

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Abstract
This study determines perceived benefits of pre-natal exercise among pregnant women attending antenatal clinic at Federal Teaching Hospital, Abakaliki based on parity and location. Two research questions and two corresponding research hypotheses guided the study. The study adopted survey design, with7200 as the population of the study while the sample was 720 pregnant women attending antenatal clinic at Federal Teaching Hospital Abakaliki. Self-developed structured questionnaire was used as the instrument for data collection. Mean and standard deviation were used to answer the research question while ANOVA and t-test statistic were used to test the hypotheses at 0.05 level of significance. The study found out that pregnant women attending antenatal clinic at Federal Teaching Hospital Abakaliki had positive perception on the benefits of pre-natal exercise based on parity and location and also there were significant differences based on parity and location. The study therefore, recommended that Government, Non–Governmental Organizations (NGO) and health educators should organize workshop, seminar and health talks during the women annual gathering in churches, villages and antenatal visit on the usefulness of prenatal exercise to continue sustaining the positive perception of these women on the benefits of pre-natal exercise.
Keywords: perceived benefit, prenatal exercise, parity, location, Ebonyi State

Introduction

Pregnancy is a specific period that most women find it difficult to engage in some tasking activities as a result of hormonal changes. This often decreased their physical activity, thereby placing this special population at risk of several chronic diseases and sometimes premature mortality (Hausenblas, 2010). Pre-natal exercise is described as physical effort performed by pregnant women in order to improve their health before delivery and is of great benefit to both the mother and the foetus (Clap and Rizzle, 2012; Jackson, 2005 and Clap, 2000). Engagement in prenatal exercise by pregnant women help to maintain and tone the muscle of the body, make them strong, agile and facilitates increase endurance needed during labour (Fraser and Cooper, 2014). Pre-natal exercises are physical activities that are performed by women during pregnancy (Smith, Foster and Campbell, 2011). It has the potential to reduce most of the risks associated with pregnancy including the onset of severe hypertension and gestational diabetes in pregnant women (Wadsworth, 2007). These benefits can only be achieved if pregnant mother perceive it as useful and are willing to engage in these exercises. Perception refers to how a person sees a situation or the feeling an individual has about a thing.

The exercises recommended for pregnant women include transverse exercises which the pregnant women should do sitting and breathing-in through the nose and exhale out through the mouth, pulling in the abdomen below the umbilicus keeping the spine at a place breathe normally holding the position for up to 10 seconds then gradually relax, repeating exercise up to 10 times. This exercise tones the transverse abdominal muscles which gives support to the spine, and also help to reduce back pain (Hodges and Richardson, 2006). Another exercise is foot and leg exercise. According to Fraser and Cooper (2004) the blood circulation during pregnancy is low because the venous return is sluggish and this can lead to problems such as cramp and varicose veins. The following simple exercises and advice is expected to improve the circulation and prevent the problem of sluggish venous return. The pregnant women should sit down or half lie with someone to support their legs, and then bend a little stretching the ankle up to 12 times, circling both the feet at the ankle for at least 20 times in each direction. Breast Support/Pectoral Toning exercise is another exercise which enlarged and increase in the breasts weight during pregnancy, the breast needs extra support. Exercise is needed to strengthen the muscles of the breast.

The pregnant women should sit puts her hands together, as if she is praying, and raise the elbows to her shoulder, and slowly presses her hands together and is hold the position till a count of four then releases it slowly, and she can repeat the exercise as many times as possible (Shrock, 2008).

A lot of variations occur in a woman's breathing rhythm during pregnancy. This is brought about by the developing uterus pushing up the diaphragm and thus compressing the thoracic cavity which makes breathing difficult especially during the last trimesters (Fraser and Cooper, 2004). There is need to make the pregnant women ready for the rhythmic and uniform breathing pattern during labour and ensure that there is a good intake of oxygen through. This they should do through exercises that relax their abdominals as well as their low chest and improves breathing techniques to ensure good intake of oxygen and relaxing during pregnancy and through labor (Bing, 2011).

Walking is a very good activity for a pregnant woman; she should walk for 30 minutes, it is the cheapest form of exercise because it requires just a flat shoe or snickers and comfortable clothes. Walking is also an exercise that can help in improving the pregnant women aerobic fitness. There is need to use the modified walking form in other to derive a significant benefits, therefore the pregnant women should be advised to increase the walking speed, walk up and down the hill and to walk holding dumbbells as this can raise the heart to the level that can improve their fitness level (Shrock, 2008).

The perceived usefulness of prenatal exercise has been influence by several factors which according to Gaston and Cramp, (2011) include parity and location. Parity is a factor that can influence the pregnant women's perception on the usefulness of prenatal exercise. Parity has to do with the number of deliveries or childbirths a woman has had. Gaston and Cramp (2011) concluded that pregnant women with previous children have less time to engage in prenatal exercise but they still have higher energy expenditure because of the increase daily activities as she tries to meet up with the needs of her older children. Fill, Joseph, Armson and Dodds (2009) showed that having previous children reduces their level of exercise participation. Mottola and Campbell (2003) stated that first time pregnant women were believed to have a higher level of fitness when compared with other women with previous children. Fill, Joseph, they further stated that pregnant women with high parity may not participate in physical exercise than women pregnant with their first issue. Gaston and Vamous (2012) maintained that there was significant difference in the perceived benefits of prenatal exercise based on parity among the population studied.

Location as indicated by Igbokwe (2008) is an environmental factor which could be associated with the perception of mothers towards healthy programmes like prenatal exercise. He further argues that pregnant women in urban areas tend to manifest positive attitude towards prenatal exercise than their rural counterparts. However, Myles (2009) found out that there was significant difference between urban and rural pregnant women on the perceived benefits of prenatal exercise. Melton, Marshall, Bland, Schmide and Gilion (2013) concluded that rural pregnant women may not participate in physical activity than urban pregnant women.

Statement of the problem

Literatures reviewed in the study have shown that during pregnancy most pregnant women experience discomfort that are associated with either hormonal changes or physical changes such as nausea and vomiting, backache, constipation, preeclampsia which affects over half of the pregnant women and might lead to death (Davis, 1996; Snell, Harghey, Buck and Mareck, 1998). It was reported that Nigerian woman have a 1-in-23 risk of death from any cause that is related to pregnancy and delivery in Nigeria which is higher than the general 1-in-31 maternal death risk for pregnant women throughout the sub-Saharan Africa (WHO/UNICEF/UNFPA/World Bank, 2008). Evidence from Ebonyi State Ministry of Health (2010) indicate that Ebonyi State records one death out of every 100 live birth in pregnancy related cases; this makes Ebonyi State to be among the communities with the highest maternal mortality rates in the world. Merson, Black and Mills (2006) listed the direct causes of maternal mortality which includes hypertensive disorders of pregnancy (preeclampsia), gestational diabetes, obstructed and prolonged labour. ACOG (2002) recommends that prenatal exercise can reduce the rates of these direct causes of high maternal morbidity and mortality. Despite the numerous benefits that are linked to the prenatal exercise, studies still show that many pregnant women in Nigeria do not engage in the exercise (Miller, Sales, Kopjar, 2005). In addition, prenatal exercise is not publicized and in some places it is termed a taboo. This has led to increased rate of maternal and foetal mortality in Nigeria and in Ebonyi State. Therefore, the main purpose of this study was to determine the level of perception of benefits of prenatal exercise among pregnant women in Ebonyi State based on parity and location. The study tested two hypotheses at 0.05 level of significance.

Methods

The study used survey design. The study setting was Federal Teaching Hospital, Abakaliki (FETHA). A total of 7200 pregnant women attending antenatal clinic was the population for the study and a sample of 720

representing 10% of the population participated in the study. In the selection of the participant, the study adopted purposive sampling technique.

The instrument used for data collection was self-developed structured questionnaire titled: Benefits of Prenatal Exercise Questionnaire (BPEQ). The questionnaire had two sections, A and B. Section A sought information on parity and location of study participants while section B sought information on the perceived benefits of pre-natal exercise designed on a 4-point scale of strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD).It was validated by three experts in Human Kinetics and Health Education Department, Ebonyi State University Abakaliki. Data collected from thirty pregnant women attending antenatal clinic in Parklane Hospital, Enugu State were used to establish the reliability of the instrument. It had a reliability coefficient of 0.89 which was obtained using Cronbach alpha. The reliability coefficient was considered good enough of 0.60 criteria for a good instrument by Ogbazi and Okpala (1994).

In order to gain access to the respondents a consent note with explanation on the purpose, method of responses and confidentiality was attached to the questionnaire and permission to conduct the study was obtained from the Hospital administrators. The nurses and midwives assisted the researchers in the distribution and collection of the questionnaire in the antenatal clinic. Copies of the questionnaire administered on each day were collected from the participant immediately on the completion and this yield 100% return rate for the questionnaire. The completed copies of questionnaire were coded and analyzed using both descriptive and inferential statistics. Mean and standard deviation were used to answer the research questions and a criterion mean ($\bar{x}$) of 2.50 was set for the study and any mean above 2.50 was adjudged as positive perception of benefits of prenatal exercise while mean below 2.50 was considered negative perception. A criterion mean was derived by adding up the scale values and dividing the sum by the number of scale option thus: 4+3+2+1 =10÷4 = 2.50.The hypotheses were tested using analysis of variance (ANOVA) and t-test at 0.05 level of significance.

Results

Table 1: **Means and Standard Deviations on the perceived benefits of pre-natal exercise among pregnant women based on parity**

Variables	N	$\bar{x}$	SD	Decision
None	32	3.35	0.42	Positive
One	267	3.52	0.24	Positive
Two	190	3.49	0.31	Positive
Three	86	3.51	0.26	Positive
Four	59	3.55	0.16	Positive
More than four	90	3.50	0.18	Positive
Grand mean		3.50	0.26	Positive

Table 1 shows that each of the groups had a mean score of 2.50 and above with grand mean of 3.50 ± 0.26. This indicates that the respondents in all the groups had positive perception of the benefits of prenatal exercise but women with four children scored higher than the other women with a mean score of 3.55.

Table 2: **Means and Standard Deviations on the perceived benefits of pre-natal exercise among pregnant women based on Location**

Variables	N	$\bar{x}$	SD	Decision
Rural	81	3.40	0.37	Positive
Urban	643	3.51	0.25	Positive

Table 2 indicates that both the respondents from rural and urban areas had positive perception of benefits of prenatal exercise. The urban women had higher mean score of 3.51.

Table 3: **Summary of ANOVA on the perceived benefits of pre-natal exercise among pregnant women based on Parity**

Source of Variance	Sum of square	Df	Mean square	F-value	p-value	Decision
Between groups	1.043	5	0.209			
Within groups	49.684	718	0.069	3.014	0.011	Significant
Total	50.727	723				

Data in Table 3 shows the calculated value of 3.014 with p-value of 0.011 which is less than 0.05 level of significance. Thus the null hypothesis was rejected, stating that there is significant difference in the perceived benefits of prenatal exercise among pregnant women attending antenatal clinic at FETHA based on parity.

Table 4: **t-test on the perceived benefits of pre-natal exercise among pregnant women based on Location**

Variables	N	$\bar{X}$	SD	t-value	p-value	Decision
Usefulness of prenatal exercise						
Rural	81	3.4	0.37	3.752	0.000	Significant
Urban	643	3.51	0.25			

Data in table 4 shows the responses of the respondent from different location on the perceived benefits of pre-natal exercise. The t-value is 3.752 with p-value of 0.000 which was less than 0.05 level of significant. This indicates that there is significant difference in the perceived benefits of prenatal exercise among pregnant women attending antenatal clinic at FETHA based on location.

Discussion

Data in Table 1 showed that pregnant women attending antenatal clinic at FETHA had positive perception on the benefits of prenatal exercise based on parity but pregnant women who have had four babies perceived prenatal exercise higher than the other women. This finding is not in line with Gaston and Cramp (2010) who opined that pregnant women who have more than one child will not have the time to take part in prenatal exercise but they have increased activities of managing the house and still cater for the older children, therefore, the body may still see the energy she is using to do house chores as exercise. The finding is not in agreement with Mottola and Campbell (2003) who stated that in terms of stopping exercise, that pregnant women who had other children at home will not participate in prenatal exercise when compared to women with their first pregnancy. Fell et al. (2009) finding that pregnant women with high parity may not participate in physical exercise than women with their first pregnant is not in line with this finding.

Table 3 indicated there was significant difference in the perceived benefits of prenatal exercise among pregnant women attending antenatal clinic at Federal Teaching Hospital Abakaliki based on parity. This finding is in line with the study conducted by Gaston and Vamous (2012) which showed that there was significant difference in the perceived benefits of prenatal exercise based on parity among the population studied.

The findings in Table 2 showed that the pregnant women attending antenatal clinic at FETHA had positive perception on the benefits of prenatal exercise based on location but urban areas had perceived benefits of prenatal exercise higher than the pregnant women from the rural areas. This finding supports the assertion of Melton, Marshall, Bland, Schmide, and Gilion (2013) that rural pregnant women may not engage in physical activity than the urban counterparts. The finding also is supported by Igbokwe (2008) posited that pregnant women in urban areas tend to manifest positive attitude towards prenatal exercise than their rural counterparts. Also the finding on Table 4, research hypothesis 2 indicated there was significant difference on the perceived benefits of prenatal exercise among the pregnant women based on location. The finding is in line Myles (2009) which found that there was significant difference in the perception of urban and rural pregnant women on the benefits of prenatal exercise.

Conclusions and Recommendation

Following the findings in this study, it was concluded that pregnant women attending antennal clinic in Federal teaching Hospital had positive perception of prenatal exercise based on parity and location. More so, on the hypothesis tested, it was accepted that parity and location significantly influenced the perception of pregnant women on the benefits of prenatal exercise. Therefore, the study recommended that:

1. Government, Non -Governmental Organizations (NGO) and Health Educators should organize workshop, seminar and health talks at health centres during antenatal sessions, churches, during the women annual gathering on the usefulness of prenatal exercise to continue sustaining the positive perception of these women on the benefits of pre-natal exercise.
2. Facilities should be provided by relevant agencies especially hospitals and recreation centre to encourage and support pregnant mothers to engage in prenatal exercises.

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