Perceived Impact of Regulated Physical Exercises on the Reduction of Prolonged Labor among Pregnant Women during Delivery in Lagos State Metropolis.

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ABSTRACT:

The study examined the perceived impacts of regulated exercise on the reduction of labor among pregnant women during delivery in Lagos state metropolis. The core objectives of the study looked at how exercise can have an impact on the reduction of labor among pregnant women in Lagos state, the significant difference between pregnant women who exercise and those who do not exercise. The study adopted a descriptive survey research method, Pilot study was conducted and analyzed to prove the validity of the instrument used for data collection. Section A tried to find out the demographic information of the respondents while section B attempted to get the respondent views to the questions using 4-points Liker scale. A sample size of 25 pregnant women in each of the five major districts in Lagos state metropolis were randomly selected to participate in the study. A standardized questionnaire known as Exercise during Pregnancy Questionnaire (EDPQ) was used for data collection for the study. Findings from the study revealed that exercise can help in the reduction of prolonged labor among pregnant women during delivery. It was also revealed that there is a significant difference between pregnant women who exercise and those who do not exercise. Based on the findings of this study it was recommended that: Women who live a sedentary lifestyle should be encouraged to adopt moderate exercises. That the importance of regular exercise on the female body cannot be overemphasized , that various community health facility and hospitals must always make provisions for pregnant women to dance and exercise their bodies on each clinic days . Health institution should provide exercise sessions and schemes for pregnant women in their various communities.

Key words: Exercise, Labor, Pregnant women, metropolis, Delivery.

Introduction

Historically, pregnant women were considered vulnerable and were advised to reduce their level of activity. In 2002, the American College of Obstetricians and Gynecologists (ACOG) updated their recommendations for exercise during pregnancy to be less restrictive; these recommendations were reaffirmed by the ACOG in 2009. However, a survey of physicians found that more than 60% of physicians were not familiar with the current ACOG guidelines for exercise during pregnancy. Although limited by a small sample size that included physicians in obstetrics and gynecology and family medicine in a geographical region. This study highlights the deficiency in knowledge regarding this subject.

Exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness (Kylasov, Gavrov, 2011, & Awoyinfa 2018). Exercise in general, reduces the morbidity and mortality associated with cardiovascular disease, hypertension, and type 2 diabetes mellitus among other chronic diseases. It also increases growth and development, prevents aging, strengthens muscles and the cardiovascular system, helps with weight management, reduces low back pain, lowers high blood pressure, and enhances psychological well-being. Some studies indicate that exercise may increase life expectancy and the overall quality of life (Ribeiro,Milanez, 2011) (O Connor , D Crowe Spinks 2005) (John Hopkin and Wilkins 2012).

Nevertheless, only 20.3% of American adults meet weekly exercise recommendations. Similarly, compliance with physical activity guidelines is low both prior to and during pregnancy. Additionally, studies have consistently shown that women tend to decrease their physical activity during pregnancy. Since pregnancy itself is a life-changing event for women, it is also a time when other lifestyle changes may be enacted, such as smoking cessation, adopting a healthy diet, or

beginning routine exercise. Additionally, as female participation in sports increases, the safety of training during pregnancy has become an important issue. Pregnancy also known as gestation is the time during which one or more offspring develop inside a woman. Many women wish to continue to pursue an active lifestyle during pregnancy, while the pregnancy itself may provide the motivation for other more sedentary life leaving women to begin an exercise program for the sake of improved health/fitness.

Also, female competitive athletes, upon becoming pregnant, may wish to continue sports performance and require careful monitoring to assure maternal-fetal safety. The mental and physical health benefits of exercise during pregnancy highlights the importance of understanding the determinants of pregnant women's physical activity. Physical activity in pregnancy has minimal risks and has been shown to benefit most women. Although some modifications to exercise may be necessary because of normal anatomic and physiologic changes and fetal requirements. Pregnancy, recovery from childbirth, and lactation occur over at least 12 months and constitute a unique period during which a woman may wish to exercise for health/fitness, recreation, or sport. Mild exercises aimed at strengthening muscles taxed by pregnancy or giving birth have traditionally been part of prenatal education classes; indeed, for decades walking has been encouraged for pregnant women. More recently, concerns have arisen about the safety of more robust exercise during pregnancy, including hyperthermia, fetal distress, miscarriage, and maternal injury. There are many potential benefits of more vigorous exercise for the mother during this time. These include weight control, physical fitness, active recreation, and positive mental health benefits (Shehan 2016,Lee Shiroma,Eric J, Lobelo and co 2012)

Statement of the Problem

The researcher has noticed with keen interest over the past few years as a concerned father who always stood by his wife on the days of her delivery of our babies, tremendous pain comes with labor during delivery. Research has shown that exercise can aid in the reduction of hours spent during labor and how exercise can help quicken the post-partum recovery time. This study therefore investigates how exercise can have an impact on the shorter duration of time spent on labor during delivery among pregnant women. It is on this note that the researcher carried out this research to investigate the impact of exercise on the reduction of time spent during delivery among pregnant women.

Purpose of the Study

The core purpose of this study was to investigate the impact of exercise on the reduction of prolonged labor during delivery among pregnant women in Lagos State. It determines how exercise can help in the shorter duration of time spent in labor in order to avoid complications during delivery among pregnant women. This study is highly significant to pregnant women because it will help reduce the amount of hours spent in labor during delivery. Also lowers the odds of complications during delivery and prevents the risk of gestational diabetes mellitus and preeclampsia. Also, clinics and obstetricians will benefit from this study because exercise reduces the maternal mortality rate in clinics and creates awareness to obstetricians by knowing the appropriate preventive measures of maternal mortality.

Research Questions

The following research questions were asked and answered in the course of carrying out the study:

i. Will exercise have an impact on the reduction of labor during delivery among pregnant women in Lagos State?

ii. Will there be a significant difference between pregnant women who exercise and those who do not exercise?

iii. Will there be a significant influence of exercise on the educational development of

communities in Lagos State?

Hypotheses: The following hypotheses were formulated and tested to guide the study:

i. Exercise will not have an impact on the reduction of labor duration among pregnant women in Lagos State.

ii. There will be no significant difference between pregnant women who exercise and those who do not exercise.

iii. There will be no significant influence of exercise on the educational development of communities in Lagos state

Concept of Exercise

Exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness (National Institutes of Health, National Heart, Lung, and Blood Institute, 2006, Awoyinfa 2018). It is performed for various reasons including strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the "diseases of affluence" such as heart disease, cardiovascular disease, Type 2 diabetes and obesity.

The term "exercise" has been used interchangeably with "physical activity", and, in fact, both have a number of common elements. For example, both physical activity and exercise involve any bodily movement produced by skeletal muscles that expends energy, are measured by kilocalories lost ranging continuously from low to high, and are positively correlated with physical fitness as the intensity, duration, and frequency of movements increase. Exercise, however, is synonymous with physical activity; it is a subcategory of physical activity (Artal, et al, 2003). Exercise is physical activity that is planned, structured, repetitive, and purposive in the sense that improvement or maintenance of one or more components of physical fitness is an objective. Exercise, then, is a subset of physical activity and may constitute all or part of each category of daily activity except sleep. However, it is more likely to be an important part of some categories of physical activity than of others. For example, virtually all conditioning and many sporting activities are performed to improve or maintain components of physical fitness.

Regular exercise makes the heart stronger and the lungs fitter, enabling the cardiovascular system to deliver more oxygen to the body with every heartbeat and the pulmonary system to increase the maximum amount of oxygen that the lungs can take in (Clapp et al., 2002). Exercise lowers blood pressure, slightly decreases the levels of total and low-density lipoprotein (LDL) cholesterol (the bad cholesterol), and increases the level of high-density lipoprotein (HDL) cholesterol (the good cholesterol). These helpful effects decrease the risk of heart attack, stroke, and coronary artery disease. In addition, colon cancer and some forms of diabetes are less likely to occur in people who exercise regularly. Exercise makes muscles stronger, allowing people to do tasks that they otherwise might not be able to do or to do them more easily. Every physical task requires muscle strength and some degree of range of motion in joints. Regular exercise can improve both of these qualities. Exercise stretches muscles and joints, which in turn can increase flexibility and help prevent injuries. (De Vos, N. Singh N. Ross& Stavrinos T. 2005)

Stress relief is one of the most common mental benefits of exercise. Regular Exercise can help to manage physical and mental stress. Exercise also increases concentrations of nor epinephrine, a chemical that can moderate the brain's response to stress. Being active greatly causes a reduction in stress levels. Aerobic and anaerobic physical training helpful for overall health. Study suggests that 30 Minutes Exercise for 5 or more days in a week, helps in lowering the depression and mental stress. On the other hand physical activity makes the body to be more tired so the individual is more ready to sleep. Good quality sleep helps improve overall wellness and can reduce stress. Regarding anxiety, the warmth and chemicals that are released during and after any physical exercise can help

people with anxiety disorders. Jumping on the track or treadmill for some moderate-to-high intensity aerobic exercise can reduce anxiety sensitivity. Egan.B.& Zierath J.R.2013)

Exercise during Pregnancy:

Historically, pregnant women were advised to refrain from exercise because of concerns about fetal risk. Simultaneously, they were advised to increase their caloric intake during pregnancy. However (in part because of these misguided recommendations), some of the weight gained during pregnancy was usually retained. (Abman 2011, Babbar2012,Barakat et-al 2011,Brankston, Mitchell, *et al* 2004) Elevated maternal weight is associated with a higher birth weight of offspring and contributes to the intergenerational transmission of obesity. Consequently, pregnancy has evolved as a major contributor to the worldwide obesity epidemic and multiple related maternal and fetal co morbidities, some of which have potential lifelong consequences.

The American College of Obstetricians and Gynecologists (ACOG) recognized that sedentary lifestyle is a major health risk for women and published its first guidelines for exercise during pregnancy in 1985, with the latest update published in 2015. Yet few pregnant women achieve an appropriate level of exercise in part because they are uncertain about the types and amount of exercise that can and should be performed. (The American College of Obstetricians and Gynecologists (ACOG 2002)

Benefit of Exercise during Pregnancy: Exercise offers potential benefits to both maternal and fetal health in the following ways:

Gestational Diabetes Mellitus: In parallel to its effect on the incidence of type 2 diabetes mellitus, regular exercise also decrease the risk of gestational diabetes mellitus.(kylasov Gaviov 2011). However, several review articles have concluded that there is insufficient evidence to support physical activity as an effective intervention to decrease the risk of developing gestational diabetes. Poor compliance to exercise regimens may have contributed to the lack of significance. Nevertheless, multiple studies have shown significantly lower glucose levels on the 24- to 28-week oral glucose tolerance test in physically active women. Although physical activity may not prevent the development of gestational diabetes, it may help manage it. (BrennerI.K.,WolfeL.a,Monga 1999)

Hypertension and Preeclampsia: Hypertension and preeclampsia are significant sources of morbidity and mortality in pregnancy. Although physical activity is known to be helpful in preventing cardiovascular disease, a similar association between physical activity in pregnancy and hypertension or preeclampsia has not been definitively shown. Data reported from the North Carolina Pregnancy Risk Assessment Monitoring System indicate that gestational hypertensive complications are less likely in women who are physically active before and during pregnancy. (Kyu,Hmwe H. Bachman, Victoria F. Alexander Lily T. 2016)

Maternal-Fetal Circulation and Fetal Growth: There is theoretical concern that exercise may negatively impact the developing fetus in terms of hemodynamic and growth. However, this is unsubstantiated in the current literature. Multiple studies have shown that blood flow to the fetus is not significantly altered by moderate-intensity physical activity. Interestingly, an increase in total vascular volume, capillary surface area, and parenchyma density was demonstrated in the placentas of women delivering at term who had exercised during the first half or all of their pregnancy. Additionally, several studies have demonstrated that women who were physically active had a decreased risk of having babies that were large for gestational age. Although additional studies would be beneficial, research thus far indicates that physical activity is safe for the developing fetus.(Clapp, 2002, sheham 2016, John Hopkin& wilkins 2012)

Some moderate types of Exercise during Pregnancy: Most exercise is safe to perform during

pregnancy, as long as one exercise with caution and do not overdo it. The safest and productive activities are:

- **Aerobic Exercise:** Aerobic exercises involve continuous activities that use large muscle groups and elevate the heart and breathing rates (Eunice .k. Gynecologists, 2013). Common examples include:
- Walking: Brisk walking gives a total body workout and is easy on the joints and muscles. Swimming and water workouts: Water workouts use many of the body's muscles. The water supports the weight so as to avoid injury and muscle strain.
- Stationary bicycling: The growing belly can affect one's balance and make one more prone to falls. Riding a standard bicycle during pregnancy can be risky. Cycling on a stationary bike is a better choice.
- **Modified Yoga and Pilates:** Yoga reduces stress, improves flexibility, and encourages stretching and focused breathing. There are even prenatal yoga and Pilates classes designed for pregnant women. These classes often teach modified poses that accommodate a pregnant woman's shifting balance.
- **Strengthening Exercises:** Strengthening exercises should be performed twice a week, on non-consecutive days, covering the main muscle groups of the body. Resistance can be provided by light weights, body weight, or elasticized resistance –bands. These strengthening exercise should be performed at moderate intensity (rating a perceived exertion 12 to 14), with slow and steady movements and proper breathing techniques (i.e. exhale on exertion). (The American College of Obstetricians and Gynecologists, 2002).

Precautions and rules: Pregnant women should exercise in a comfortable environment, maintain hydration, prevent exposure to humidity and heat conditions, and prevent fasting or hypoglycemia. Exercise should be discontinued if a pregnant woman experiences any of these warning signs or symptoms (vaginal bleeding, regular or painful contractions, amniotic fluid leakage, dyspnea before exertion, dizziness, headache, chest pain, muscle weakness affecting balance, calf pain, or swelling).Strenuous aerobic exercise of greater than 90% of Hy_{rax} is discouraged because this level of activity might potentially increase the risk for hyperthermia or dehydration and also divert a considerable amount of blood flow to the working muscles and thus affect placental perfusion, thereby compromising fetal well-being. Long-distance running and frequent heavy weight lifting (or intense isometric exercises) should also be discouraged amongst pregnant women.

Methodology

The study adopted a descriptive survey design method; the focused of the study was on the perceived impact of moderated and regulated physical exercises on pregnant women in Lagos State, the participants consisted of 100 pregnant women randomly drawn from the five major districts in Lagos state, taken 25 participants from each zone. The instrument used for data collection was questionnaire, while the data collected were analyzed using chi-square statistics and simple percentages to test for all the pre stated hypotheses.

Data Presentation and Results: Analysis of Demographic Data of Respondents

Table 1: Distribution of Respondents by Age

Age	Frequency	Percentage
18-30years	31	62%
30-above years	19	38%
Total	**50**	**100%**

Table 1: indicated that 31 (62%) of the respondents were within 18-30 years, 19 (38%) of the respondents were within 30-above years.

Table 2:Chi-Square Analysis on Impact of exercise on labor

Variable	N	df	L.S.	X^2_{cal}	X^2_{tab}	Remarks
There will be no significant impact of exercise on the reduction of labor during delivery among pregnant women in Lagos state	50	33	0.05	86.65	47.400	**Significant**

From Table 2: the chi-square value of 86.65 is greater than the critical value of 47.400. This implies that the null hypothesis which states that 'There will be no significant impact of exercise on the reduction of labor during delivery among pregnant women in Lagos state" is hereby rejected and the alternate hypothesis accepted. Which implies that there will be significant impacts of exercise on the reduction of prolonged labor during delivery among pregnant women in Lagos State

Hypothesis 2: There will be no significant difference between pregnant women who exercise and those who do not exercise.

Table 3:Chi-Square Analysis on pregnant women who exercise

Variables	N	Df	L.S.	X^2_{cal}	X^2_{tab}	Remarks
There will be no significant difference between pregnant women who exercise and those who do not.	50	21	0.05	66.46	32.671	**Significant**

From table 3 the calculated chi-square value of 66.46 is greater than the critical value of 32.671. Hence the null hypothesis which states that 'There will be no significant difference between pregnant women who exercise and those who do not exercise" is rejected and the alternate hypothesis accepted.

Discussion of findings

The first finding of this study revealed that exercise is most likely to have a significant influence on the ease of delivery. This means that women who exercise before and after conceiving are most likely to go through easier and less painful subsequent deliveries. The second finding of this study revealed that sedentary women that are women who do not participate in regular exercises are most definite to go through severe labor during delivery. The third finding of this study revealed that regular participation in exercise activities would further enlighten women on the need and importance of physical fitness exercise.

Conclusion and Recommendations

Based on the major findings of this study, this study concludes that:

- Exercise eases delivery and women who have been exercising regularly would go through a much easier labor process during delivery than women who do not exercise.
- For women who have had more than one child delivery, exercise only gets easier as they continue with it.

- Exercising creates in women an awareness on how to make delivery easier than it should be.
- Exercise is the most natural and safest way to prevent excessive pains during labor and encourage easy and smooth delivery.

Accordingly, this study recommends that pregnant women who live a sedentary lifestyle should be encouraged to adopt moderately prescribed and regulated physical exercises; and the importance of regular exercise on the female body should be emphasized at various community health facilities and hospitals. There is also the need for medical personnel to encourage pregnant women and nursing mothers on how to engage in moderate exercise. Finally, health institutions must provide moderated and regulated physical exercise schemes for pregnant women in their various communities in Lagos State metropolis.

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