

## **MENTAL AND SOCIAL EFFECT OF EXERCISE AMONG PREGNANT WOMEN IN PORT HARCOURT METROPOLIS**

**A.V. OGUNLEYE (Ph.D)**

Centre for Rehabilitative Therapy and Kinanthropometric Studies  
Department of Human Kinetics and Health Education  
University of Port Harcourt

**&**

**B. O. ADEDIJI (M.Ed)**

Centre for Rehabilitative Therapy and Kinanthropometric Studies  
Department of Human Kinetics and Health Education  
University of Port Harcourt

### **Abstract**

*There is no gain saying that the health and fitness of expectant mothers and the foetus are important to pregnant outcomes. This study considered mental and social effect of exercising among expected mothers in Port Harcourt metropolis. A sample of 500 pregnant women who had recorded at least two life births were drawn, the multi-stage sampling technique, served as the sample and a structured and validated questionnaire served as the data gathering instrument. Two research questions and two hypotheses guided the study with socio-demographic variables factored in to the hypotheses to determine their influences. Data were analyzed using descriptive statistics of mean and inferential statistics of ANOVA and  $\text{Chi}^2$  at .05 alpha levels. The findings of this study, revealed that exercises during pregnancy can enhance the cognitive function of the mother at older age, give rise to intelligent babies, reverse alcohol induced brain damage, produces general sense of well being, gives pleasure, improve self esteem and fosters creativity. Based on the findings of this study, the researchers recommend that government, stakeholders in sports to organize seminars and symposium for expectant mothers on regular basis. Recommendation of regular exercise to expectant mothers by health care providers.*

### **Introduction**

Exercise as an act, is as old as creation, during the primitive times, there were no formal and structured physical exercise programmes, but our ancestors still indulge in physical exercises in one crude way or the other. Exercise then was a means of survival. The later metamorphosized into a well structured programme that is identified as a key factor in the prevention and maintenance of many chronic diseases. More so all over the world, research has revealed the important role played by exercise in improving the health and wellbeing of the citizens.

Miffing (2007) defined exercise as performance of physical exertion to obtain or achieve normal functions such as reproduction for pleasure and for improvement of health and correction of physical deformity. There is no doubt that this definition portrays exercise as a tool for enhancing body function, improve

healthful living and restore physical abnormalities. In corroboration, Febbraio and Perderson (2002) considered exercise as the performance of movements in order to develop or maintain physical fitness and overall health, because exercise is often directed towards the honing of athletic ability or skill. To these scholars, regular participation in physical exercise is a major factor in the prevention of diseases such as diabetes type 1 & 2, cancer, cardiovascular disease, back pain, among others. More so, Stephen (2001) sees exercise as “bodily exertion for the sake of keeping the organs and functions in a healthy state, hygienic activity, such as to take exercise on horseback”. Clapp and James (2004) also supports the view of Stephen that exercise is, the activity of exerting ones muscles in various ways to keep fit”. Stephen also supported his assertion with the clue that physicians even indulge in exercises and not only that they also encourage their patients to take active part in exercise and physical activities. Moreso, previous studies conducted shows that some communities have refused women participation in sports and physical activities due to their beliefs, tradition custom and doctrine while others have tried to show some understanding in that area possibly because of their educational background and exposure to the unquantifiable dividends of regular exercise

A growing body of knowledge has lend their voice to the positive effects of exercise on the human anatomy and physiology. Most of the researchers have focused on how exercises can be used to enhance healthful living and wellness. It has been shown that physical exercise when properly prescribed and administered, are very useful to the body and that explains why physicians and exercise physiologists regularly encourage people to participate actively in physical exercises (Ajiduah, 1998). Hillman, Erickson, Kramer (2008), identified benefits of aerobic exercise on brain function that it improves cognition and performance, it also improve physical health and academic performance. Their study examines positive effect of aerobic exercise on cognition and brain function at the molecular, cellular, system and behavioural levels. The authors agreed that exercise might lead to increased physical and mental health throughout life. Researches carried out in different parts of the world on exercises confirmed that exercises can be used to diagnose and alleviate most cardiovascular diseases such as angina pectoris, arteriosclerosis, aneurism, hypertension, stroke and varicose vein (Ogunleye, 2004). Exercises are also used by sport coaches and athletes to improve neuromuscular coordination, strength, endurance and muscular performances generally. Beside that, exercises can be used to alleviate the cases of obesity, athritis and stress (Franks, Edward and Howly, 1989).

The general and specific fitness levels of women are usually low during pregnancy. They may experience slight morning illnesses and waist pain, lower back pain, body weakness and lack of coordination. The three months maternity leave often given to pregnant women is meant to condone this period of lack of fitness in women. If properly timed, the months after giving birth should be used to bring the body back to shape and acquire once more the general and specific fitness levels. (Ogunleye, 2004). Overtime, it has been observed that a good number of expectant mothers experience prolonged labour prior to delivery. On many occasions, the prolonged labour ‘has caused the death of innocent children

and pregnant mothers. In recent time, it has been noticed that miscarriages, fear and prolonged labour have become regular occurrence among pregnant mothers in Port Harcourt metropolis.

In addition, some of the notable challenges associated with pregnancy and delivery among Nigerian women and pregnant mothers are:

- i. Inability to sleep well (insomnia) due to discomfort, pain at the pelvic region and false labour.
- ii. Prolonged pregnancy beyond the expected day of delivery (EDD).
- iii. Prolonged labour, Caesarian section, loss of lives, and so on and so fourth. As a result of this, the researchers are bothered on the need to unravel whether exercising during pregnancy can improve the mental and social life of our expectant mothers.

This study therefore covers Port Harcourt metropolis which encompasses Obio/Akpor Local Government and Port Harcourt City Local Government Areas of Rivers State.

### **Research Questions**

The following research questions guided the conduct of this study;

1. What are pregnant women perceived mental effect of exercise during pregnancy?
2. What are pregnant women's perceived social effect of exercise during pregnancy?

### **Research Hypothesis**

The following hypotheses were tested in the conduct of this study:

1. There is no significant difference in the perceived mental effect of exercising during pregnancy among pregnant women in Port Harcourt Metropolis with respect to length of marriage.
2. There is no significant difference in the perceived social effect of exercising during pregnancy among pregnant women in Port Harcourt Metropolis with respect to length of marriage.

### **Methodology**

The design of this study falls under the classification of descriptive survey design. The population for the study comprised mothers attending ante-natal in all government hospitals in Port Harcourt Metropolis, Rivers State. The multi-stage sampling technique was employed in selecting the five (5) health centers and a sample of (500) expectant mothers for the study. A self structured and validated questionnaire with a reliability index of .84 served as the data gathering instrument.

## Results

**Table 1: Distribution of Pregnant Women by their level of education and their perceived mental effect of Exercise during pregnancy**

S/N	Items	No Formal Education	Primary/secondary Education	NCE, OND Education	HND 1 <sup>st</sup> Degree	University Higher Degree	Mean Set
1	Exercise enhances cognitive function of the mother at older age	2.55	3.08	3.09	3.40	3.22	3.14
2	It give rise to intelligent children	2.73	3.06	2.88	3.13	2.63	2.95
3	Children born to exercisers exhibit higher oral language skills	2.56	2.93	2.66	2.80	2.37	2.75
4	It may reverse alcohol induced brain damage	2.36	2.81	2.54	2.65	2.29	2.62
5	It increases the blood and oxygen flow to the brain	3.00	3.01	3.13	3.15	3.02	3.07
	<b>Aggregate Mean</b>	<b>2.64</b>	<b>2.99</b>	<b>2.87</b>	<b>3.01</b>	<b>2.73</b>	<b>2.92</b>

As shown in table 1 above, the weighted mean for women with all levels of education shows clearly that they perceived as true that exercising during pregnancy can enhance the cognitive function of the mother at older age, give rise to intelligent children and their children exhibits higher oral language, skills, may reverse alcohol induced brain damage and increases the blood and oxygen flow to the brain. This is because all these perceived mental effect variables have weighted mean set ranging between (2.62 which is the lowest) and (3.14 which is the highest), all of which are within the weighted response mode of 3.00 for “true”.

A comparison among respondents by level of education shows that pregnant women with the lowest level of education have the lowest perception of the mental effect of exercise during pregnancy (aggregate mean = 2.64), seconded by those with higher degrees (aggregate mean = 2.73). Also those with HND/1<sup>st</sup> degree have the highest perception (aggregate mean = 3.01), seconded by primary/secondary school certificate holders (aggregate mean = 2.99). Pregnant women’s perceived Social Effect of Exercise.

**Table 2: Distribution of Pregnant Women by their level of Education and their Perceived Social Effect of Exercise during Pregnancy**

S/N	Items	No Formal Education	Primary/secondary Education	NCE, OND Education	HND 1 <sup>st</sup> Degree	University Higher Degree	Mean Set
1	Exercise helps to improve self esteem	3.27	3.22	3.12	3.32	3.03	3.19
2	It fosters creativity	3.09	3.15	3.05	3.15	2.70	3.06
3	It produces a general sense of wellbeing	3.18	3.30	3.29	3.28	2.90	3.24
4	It gives pleasure	3.73	3.16	3.20	3.32	3.08	3.21
5	Babies born to exercisers score higher in orientation behaviour towards stimuli in the environment	3.00	3.07	2.95	3.17	2.49	2.98
6	Babies born to exercisers acquire social skills quickly.	2.70	2.95	2.94	3.18	2.80	2.97
7	It lead to making/meeting new friends	2.00	2.87	2.82	2.99	2.74	2.84
	<b>Aggregate Mean</b>	<b>3.01</b>	<b>3.12</b>	<b>3.05</b>	<b>3.20</b>	<b>2.85</b>	<b>3.08</b>

From the weighted mean score showing in table 2 above, it is clear that pregnant women perceive social effect of exercise during pregnancy as: exercise produces a general sense of well being (3.24), gives pleasure (3.21), helps to improve self esteem (3.19), and fosters creativity (3.06). They also believe that children of exercisers score higher in orientation behaviour (2.98), acquire social skills quickly (2.97) and make friends easily (2.84). All these mean set fall in the region of “true”.

Judging their responses by their level of education. HND/1<sup>st</sup> degree holders have the highest perception of the social effects of exercise during pregnancy (aggregate mean = 3.20), followed by those with primary/secondary school certificates (3.12) and those with no formal education (3.01). Those with University higher degrees have the lowest perception of the social effect of exercises during pregnancy (see aggregate mean of 2.85 in table 2).

## Hypotheses

### Hypothesis 1

The first hypothesis in this study compared women with varying length of marriage experience on their perceived mental effect of exercising during pregnancy. One way analysis of variance (ANOVA) Statistics was used in analyzing the data and the result is presented in table 3 and 4.

**Table 3: One-way analysis of Variance on perceived Mental Effect of Exercising during Pregnancy among Pregnant Women in Port Harcourt Metropolis with respect to different Length of Marriage**

ANOVA

Mean mental Effects					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.856	4	1.464	5.119	.000
Within Groups	133.553	467	.286		
Total	139.409	471			

The result of data analysis in table 3 shows that the comparison of the mean opinion assessment of the perceived mental effect of exercising during pregnancy among women with respect to different length of marriage within the scores of 4, 467 and 471 degree of freedom which has yielded an F-value of 5.119 scores that is significant at 000. with 0.05 level of significant that was used in testing the hypothesis. Therefore the result shows that null hypothesis rejected.

To find out which categories of pregnant women that differ significantly, a multiple comparison test was carried out and the test result is shown in table 4.

**Table 4 shows the multiple Comparison test of mean Perceived Mental Effect of Exercise among pregnant Women of varying length of Marriage The categories of pregnant women that differ significantly.**

Multiple Comparisons

Dependent Variable: Mean mental Effects

	(I) Length of marriage	(J) Length of marriage	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	Below 6 yrs	6 - 10 yrs	-.1435*	.06999	.041	-.2810	-.0059
		11 - 15 yrs	-.1406*	.06705	.037	-.2724	-.0088
		16 - 20	-.0076	.06814	.911	-.1415	.1263
		Above 20 yrs	.5179*	.16709	.002	.1895	.8462
	6 - 10 yrs	Below 6 yrs	.1435*	.06999	.041	.0059	.2810
		11 - 15 yrs	.0029	.07453	.969	-.1436	.1493
		16 - 20	.1358	.07552	.073	-.0126	.2842
		Above 20 yrs	.6613*	.17023	.000	.3268	.9958
	11 - 15 yrs	Below 6 yrs	.1406*	.06705	.037	.0088	.2724
		6 - 10 yrs	-.0029	.07453	.969	-.1493	.1436
		16 - 20	.1330	.07280	.068	-.0101	.2760
		Above 20 yrs	.6584*	.16904	.000	.3263	.9906
	16 - 20	Below 6 yrs	.0076	.06814	.911	-.1263	.1415
		6 - 10 yrs	-.1358	.07552	.073	-.2842	.0126
		11 - 15 yrs	-.1330	.07280	.068	-.2760	.0101
		Above 20 yrs	.5255*	.16948	.002	.1925	.8585
Above 20 yrs	Below 6 yrs	-.5179*	.16709	.002	-.8462	-.1895	
	6 - 10 yrs	-.6613*	.17023	.000	-.9958	-.3268	
	11 - 15 yrs	-.6584*	.16904	.000	-.9906	-.3263	
	16 - 20	-.5255*	.16948	.002	-.8585	-.1925	

\*. The mean difference is significant at the .05 level.

The mean differences asterisked in table 4 above has clearly shown that significant differences are found between women below 6years in marriage, 6-10years in marriage, 11-15 years in marriage, 16-20years in marriage and above 20years in marriage. From the mean subsets of these groups, it means that pregnant women with 11-15years marriage experience (mean = 3.01) have slightly higher perception of the mental effect of exercising than those below 6years experience in marriage (mean 2.86) and 16-20 years experience in marriage (mean = 2.87). This shows that their perception is high on mental effects of exercising among married women during pregnancy.

**Hypothesis 2:** There is no significant difference in the perceived social effect of exercising during pregnant among pregnant women in Port Harcourt Metropolis with respect to length of marriage.

**Table 5: One-way Analysis of Variance on Perceived Social Effect of Exercising during Pregnancy among Pregnant Women in Port Harcourt metropolis with Different Length of Marriage**

**ANOVA**

mean Social Effects

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.191	4	.548	2.260	.062
Within Groups	113.711	469	.242		
Total	115.902	473			

The result of the data analysis in table 5 shows that the comparison of the mean opinion assessment of the perceived social effects of exercising during pregnancy among pregnant women with respect to length of marriage and the scores is within the range of 4,469 and 473 degree of freedom which yielded an F-value of 2.260, scores of significant value at .062. The significant level is by far higher than 0.05 levels that were used in testing the hypothesis. This means that the differences are not significant among some categories of pregnant women. Therefore the null hypothesis is retained. To find out which categories of pregnant women differ significantly, a multiple comparison test was carried out and the test result is shown in table 6 below.

**Table 6: Multiple Comparison test of mean perceived social effect of exercising among pregnant women in Port Harcourt Metropolis with different length of marriage**

**Multiple Comparisons**

Dependent Variable: mean Social Effects

(I) Length of marriage	(J) Length of marriage	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LSD Below 6 yrs	6 - 10 yrs	-.0172	.06453	.790	-.1440	.1096
	11 - 15 yrs	.0329	.06151	.592	-.0879	.1538
	16 - 20	.0091	.06265	.884	-.1140	.1322
	Above 20 yrs	.4435*	.15388	.004	.1411	.7459
6 - 10 yrs	Below 6 yrs	.0172	.06453	.790	-.1096	.1440
	11 - 15 yrs	.0501	.06835	.463	-.0842	.1844
	16 - 20	.0263	.06937	.705	-.1100	.1626
	Above 20 yrs	.4607*	.15674	.003	.1527	.7687
11 - 15 yrs	Below 6 yrs	-.0329	.06151	.592	-.1538	.0879
	6 - 10 yrs	-.0501	.06835	.463	-.1844	.0842
	16 - 20	-.0238	.06658	.721	-.1547	.1070
	Above 20 yrs	.4106*	.15552	.009	.1050	.7162
16 - 20	Below 6 yrs	-.0091	.06265	.884	-.1322	.1140
	6 - 10 yrs	-.0263	.06937	.705	-.1626	.1100
	11 - 15 yrs	.0238	.06658	.721	-.1070	.1547
	Above 20 yrs	.4344*	.15598	.006	.1279	.7409
Above 20 yrs	Below 6 yrs	-.4435*	.15388	.004	-.7459	-.1411
	6 - 10 yrs	-.4607*	.15674	.003	-.7687	-.1527
	11 - 15 yrs	-.4106*	.15552	.009	-.7162	-.1050
	16 - 20	-.4344*	.15598	.006	-.7409	-.1279

\*. The mean difference is significant at the .05 level.

The mean difference asterisked in table 6 shows that significant differences are not found between women below 6 years in marriage, 6-10years in marriage, 11-15years in marriage, 16-20years, and above 20years in marriage. From the mean subset of these groups, it means that for all the pregnant women below 6years in marriage (mean = 3.06), 6-10years in marriage (mean = 3.11) 11-15years in marriage (mean = 3.0) and 16-20 years in marriage (mean = 3.08) have a fairly similar perception of the social effect of exercising during pregnancy with the exception of pregnant women that are above 20years in marriage. When compared to the mental effect scores, it shows that there were slight differences in value to exercise among pregnant women.

**Discussion**

The result obtain during the course of this study shows that Pregnant women perceived the mental effect of exercise during pregnancy as enhancing the cognitive function of the mother at older age, giving rise to intelligent children, their children exhibits higher oral language skill, experience reversal of alcohol induced brain damage and increase in the blood and oxygen flow to the brain. Pregnant women with the lowest level of education have the lowest perception of the mental effects of exercise during pregnancy while those with Higher qualification have the highest perception of the mental effect of exercise during pregnancy.

The finding of this study agrees with the study of Noe (2011) that pregnant women who exercise during pregnancy have shorter period of labours, healthy babies and

children with higher intelligent quotient. This finding also supported the study of Dacosta, Rippen, Drista & Ring (2003), Poudivigne & Connor (2006), Carlstad (2008) that pregnant women who exercise regularly delivered in good health, their children score significantly higher on test of general intelligence and oral language skills. Again, the result from the study also revealed that women with higher qualification perceived social effect of exercised during pregnancy as yielding general sense of well being, gives pleasure to the exerciser, improve their self esteem, foster creativity, acquire social skill faster and make friends easily. The result of this study agreed with Eboh (1994), Onowhakor (1996) and coakley (1998) that individuals participates in sports to improve fitness level, make new friends, for social and emotional development, to earn a living and to relieve stress and boredom. Clapp & James (2004) also supported this view that exercise improve one's mood and lessen mood swings, improve one self image and allow you to feel a sense of control.

### **Conclusions**

The study concludes that pregnant women in Port Hacourt percieved the mental effect of exercise during pregnancy as enhancing the cognitive function of the mother at older age, give birth to intelligent children, and their children exhibitings higher oral language skill. In addition, they also percieved that the social effect of exercise during pregnancy produces general sense of well being, gives pleasure, improve self esteem and foster creativity, due to their social integration.

### **Recommendations**

Based on the findings of this study, the following recommendations were made:

- 1) Government and stakeholders in sport and games should organise seminars and symposium from time to time to teach expectant mothers on the values of exercising, exercise varieties and guidelines for carrying out exercises as well as putting safety measures in to considerations.
- 2) The health workers and medical professionals should integrate exercise expects in the recommendation of regular exercises to our expectatnt mothers.

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