

Weight Management Options Adopted by Female Teacher in Secondary Schools in Enugu Education Zone During Pregnancy

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Abstract

Body weight management constitutes the numerous challenges that an expectant mother and specifically an expectant working mother faces throughout her period of pregnancy and beyond. The study investigated weight management options adopted by female teachers in public secondary schools in Enugu State during pregnancy. Literature was extensively reviewed. Three research questions and one hypothesis guided the study. Descriptive survey research design was adopted for the study. The hypothesis was tested with t-test statistic at .05 level of significance. 509 out of 5488 female teachers teaching in public secondary schools in Enugu education zone formed research respondents. Researchers' developed and validated questionnaire titled "Weight Management Options Questionnaire (WMOQ)" was used as instrument for data collection. Data analysis was done with χ^2 , S.D and t-test statistic. The findings among others revealed that female teachers in public secondary schools in Enugu Education Zone do not adopt exercise as an alternative therapy for weight management during pregnancy. However, diet is an adopted option for weight management during pregnancy especially among these teachers in the urban schools. Conclusively, female teachers in public secondary schools are generally inactive during pregnancy. The recommendations among others include expansion of antenatal curriculum content to include fitness and wellness pursuit while government should establish wellness centers in secondary schools to get women more active while still at work. The state workers' monthly fitness and wellness programme organized by the Ministry of Youths and Sports should be expanded to target expectant mothers.

Keywords: Management, Overweight, Utilization, Female Teachers.

Introduction

The occurrence of pregnancy presents great joy not only to the woman but also her husband, members of the family as well as friends and well-wishers especially if no complications or problems come with it. According to World Health Organization (WHO) (2016), Pregnancy represents the nine months or so for which a woman carries a developing embryo and fetus in her womb. Pregnancy also known as gestation is the time during which one or more offsprings develop inside a woman (Abman, 2011).

Pregnancy is for a specific period of time and takes place resulting in some changes in the physiological state of the woman. A woman that is pregnant has her breasts enlarged, nipples bluish and engorged and increased blood supply and body weight (Shrwer, 2013). According to Rooney and Schanberger (2002), Richens (2008) weight gain is a common occurrence during pregnancy and has continued to present risks for women's health following birth.

Overweight is a common phenomenon in women during pregnancy. Overweight is defined as a Body Mass Index (BMI) of 25 or more (Emiola, 2008, Otinwa, 2014). The National Institute of Health (NIH) (2016), perceived overweight from two different ways, in one sense it is a way of saying precisely that someone is heavy; the other sense of overweight is more precise and designates a state between normal weight and obesity. Overweight on the basis of BMI estimates, according to NIH (2016), is a BMI of 27.3 percent or more for women and 27.8 percent or more for men. However, the use of BMI have received criticisms from experts. Estimating overweight using BMI or Quittlet index does not quantify total body level of fat deposit (Gray & Fujioka, 2011). The WHO perception of obesity relate the notion that if an individual is living with excessive fat that is capable of reducing certain physiological functions such as smooth delivery, he or she is said to be overweight. The recommended pregnancy weight gain is 25-35 pounds.

There are many variables at play that may in fact make it healthier to fall outside of that range (Hansen, 2014). Weight gain during pregnancy is mainly due to stored fat for breastfeeding which accounts for 5-10pounds, increased blood supply (about 50percent) which accounts for 4 pounds of weight; large uterus which accounts for 2 or more pounds in weight; baby 7-8 pounds at birth, placenta 1-5 more ponds, amniotic fluid-2 pounds and breast tissue 2-3 pounds of weight (Hansen,2014). Overweight during pregnancy comes with several health consequences. Heslehurst, Lang, Wilkson and Summerbell (2007), noted that problems such as

gestational diabetes and pre-eclampsia (pregnancy induced hypertension) constitute diverse consequences associated with obesity and overweight during pregnancy. Ceross (2004), in the light of this suggested that pregnancy may be an ideal time to encourage women manage their weight as an opportunity to regulate physiological changes that might lead to future health risks and increase in the prevalence of obesity and overweight in pregnancy. Rasmussen, Chu, Kin, Schmid and Lan (2008); Jacobsen, Skjeldstad and Sturdee (2008), observed that obesity and overweight in pregnancy are associated with an increased risk of a number of serious adverse outcomes such as miscarriage, thromboembolism, gestational diabetes, pre-eclampsia, dysfunctional labour, postpartum hemorrhage, wound infections, still birth and neonatal death. Besides, there is higher caesarean section rate (C.S) and lower breastfeeding in this group of women compared to women with healthy body mass index (BMI) (Amir & Donath, 2007).

Other health consequences of maternal overweight have been reported by health experts. Bellamy, Casas, Hingovani and Williams (2009), found unpaired glucose tolerance and gestational diabetes that results in increased risk of the pregnant mother developing type 2 diabetes in future. Aside, the baby faces a higher risk of congenital anomaly obesity (In later life) (Braford & Mc Lean, 2008). Confidential enquiry into Material and Child Health (2007), reveal that pregnant women with a BMI 30kg/m² are more likely to die during pregnancy/childbirth or within 42 days of childbirth or within overweight or obese. The female teachers in public secondary schools in Enugu Education Zone may likely experience these highlighted health consequences should they become overweight during pregnancy. This also may imply that the female teachers must understand and adopt strategies to maintain a healthy weight during pregnancy.

Getting pregnant women to manage their body weight could lead to stigmatization. To this end, Nyman (2010), stated that women would have preferred their weight not to be the focus of attention during interactions with professionals. Earlier report by Campos, Sagay, Emsberger, Oliver and Geassser (2006), warned that over-emphasis on the effects of overweight and obesity on health as well as other negative discourses has served to stigmatize overweight individuals. Managing overweight during pregnancy is crucial to the health and wellness of the mother and fetus.

Management relates to the process of planning, organizing, directing, coordinating and controlling people or phenomenon (Follett, 2016). This definition points to the fact that to manage a phenomenon such as pregnancy may require some levels of planning, organizing directing, coordinating and controlling women during this period. This also may imply what women can do to improve the chances of having healthy pregnancies and babies. National and International guidelines for weight management in pregnancy are focused on diet and exercise recommendations, sometimes coupled with specific information about risks to maternal or fetal health (Institute of Medicine, 2009; the Royal Australia and New Zealand College of Obstetrics and Gynecologist, 2013). Exercise for instance has been widely recognized as a good management of overweight during pregnancy.

Experts in movement science have generally recognized exercise as one of the effective strategies for health and general wellbeing. Exercise is defined as any activity requiring physical effort, carried out especially to sustain or improve health and fitness, a task or activity done to practice or test a skill (Amopetu, 2016). According to Otinwa, 2016), exercise is a subset of physical activity that is planned, structured and repetitive and has a final or intermediate objective on the improvement in maintenance of physical fitness. These definitions of exercise point to the fact that female teachers in public secondary schools in Enugu education zone stand a chance of improving upon their physical fitness and avert weight gain during pregnancy if they regularly engage themselves in exercise.

The benefits of exercise have been highlighted in literature reports. Engaging in 30 minutes of moderate exercise per week is excellent in weight reduction (Academy of Nutrition and Diabetics 2014; Livestrong.com, 2016). One study in 2012 Journal of Strength and Conditioning Research shows that participants who walked one mile burned 89 calories (fat) during their exercise; 110 calories over the next few hours after the payout; while the participants who ran one mile burned 112 calories as the day progressed (Academy of Nutrition & Diabetics, 2014). In another report, Kramer, Mc Donald (2006), observed that regular aerobic exercise during pregnancy improve or maintain physical fitness. However, a contrast report by Domenjor, Kayser and Boulvain (2014), submitted that physical exercise during pregnancy does not appear to decrease the risk of Caesarean Section (C.S). Despite the criticisms surrounding use of exercise to manage weight gain during pregnancy the Chemical Practice Obstetrics Committee of Canada (2010), recommends that “All women without contradictions should be encouraged to participate in aerobic and strength – conditioning activities. Although an upper level of safe exercise intensity has not been established, women who were regular exercisers before pregnancy and who have uncomplicated pregnancies should be able to engage in high intensity exercise programmes (Davices, 2003) These benefits accrue from regular exercise participation especially when combined with dietary control could be an effective intervention for overweight during pregnancy among women and specifically teachers in secondary schools in Enugu education zone.

Dietary control has been reported as another effective management strategy of overweight during pregnancy.

This is because during this period, the body of the women is building the baby's tissue. To this end Beradi (2017), posited that it is critical for the women to be getting extra calories, more micro nutrition (Vitamins and minerals) than you normally would. Subsequently the author recommended that foods that should be minimized and/or avoided by a pregnant woman include: Protein; eat 1 gramme of protein per kilogram of your body weight every day (i.e. if you are 80kg, eat 150 gramme daily), Options for lean meat preferably grass-fed, organic, which include; a small amount of dairy if you can tolerate it, Supplement with natural, unsweetened protein power/if necessary. Omega 3; Walnuts, Seaweeds, Algae or fish oil supplements (non-liver), Hemp. Vitamin D; 20 – 30 minutes sun exposure 2 -3days per week, Vitamin D – fortified foods. Zinc; Leaf vegetables, Legumes, Folate fortified foods. Calcium – rich foods; Dark leaf vegetables, Legumes, Nuts, Seeds, Fortified milks, Fortified cereal grains. Vitamin B – 12; Animals foods. Iron-rich food; Dark, leaf vegetables, Dried fruits, Whole grains, Nuts, Seeds, Animals foods (Beradi, 2017) have been recommended.

On what to limit, avoid or minimize include; alcohol, caffeine, cereal meats, artificial sweeteners, high sugar intake, using cravings to justify poor food choice. The pregnant women wanting to keep appropriate body form should completely avoid raw or uncooked animal foods such as meat, sea food and eggs. In addition, shark, king mackerel tile fish (cooked or raw), soft cheeses, tobacco and others (Beradi, 2017). For supplements, the expectant mother should maintain a daily multi-vitamin/multi-mineral uptake. If female teachers teaching in public secondary schools in Enugu education zone should choose the right food as outlined, they are likely going to keep appropriate body weight and possibly avoid health conditions associated with obesity and overweight. Beside the use of diet as weight management option during pregnancy some women may prefer alternative therapies.

Many individuals including pregnancy women are looking for “magic bullet” approaches for weight loss and unwilling to waive the irrelevant risks of using non-evidence – informed products. According to Ferraro Patterson and Chaput (2015), common behaviours and/or agents used to control weight include, but not limited to meal-skipping and fasting, smoking for appetite reduction and compensatory exercise, as well as consuming stimulants such as caffeine, ephedrine, prescription drugs and energy drinks. Greenway, 2001; Jaffers, Vatalaro – Hill and Benotsch, (2014), estimated that roughly 12% of adolescent women engage, in extreme weight control behaviours including diet pills laxatives, diuretics or purging. However, Fennaro, Patterson and Chlput, (2015), noted that despite attempts to control weight, those who engage in unhealthy dietary practices commonly weight-cycle and regain over time. In addition, they experience depression and have eating disorders, a trend that increases with rising body mass index (BMI) and disproportionately affects women (Neumark – Sztainer, Wall story & Standish 2012, Stice & Bearman, 2001).

People resort to alternative options for weight control for certain reasons. According to (Neumark, Sztainer, Wall, Story, Hannan, Perry & Iving, 2002), maintaining lost weight is a challenging task and as such they resort to supplements. Health Canada Reminds (2008), observed that ephedra is the most commonly cited weight control agent coupled with other leading over-the-counter (OTC) products and supplements, including bitter orange as a replacement for ephedra and/or high doses of caffeine are often hidden or undisclosed behind multiple herbs. However, a recent randomized controlled trial reported that caffeine/ephedrine supplementation (200mg/20mg) produced modestly effective weight loss (-6.0%) and reduced fat mass (-10.0%) when medically supervised (Liu, Smith, Fujioka & Greenway, 2013).

Other alternative strategies of losing weight have been suggested. According to Woodruff (2013), the use of liposuction (surgical) to remove excess fat from the body could be helpful. The report however advised that the participant in this approach may need calorie deficit after the surgery to prevent future weight gain. The use of hypnosis has been described as an effective weight loss alternative. Taboola (2013), stated that under this method the participants requires the services of a well-trained hypnotherapist. In this approach the therapist hypnotize the individual using repetitive verbal phrase and images designed to lead to change his or her behavior. Effective sessions should lead to better dietary habits and regular exercise by providing the extra motivation the individual needs to lose weight. Hypnosis for weight loss using verbal phrase and images involves helping participants replace negative and unhealthy behaviors and attitudes with positive ones. Many people have emotional eaters and the process of hypnosis addresses emotional issues that cause overeating. Likewise, hypnosis can give the individual the power to choices that are better for him or her hence the more likelihood to seek healthier lifestyle habits (Lickerman, 2013). Hypnosis for weight loss offers support for traditional diets when used simultaneously especially when combined with acupuncture.

Acupuncture is probably the most common alternative weight loss method. Research has indicated that ear acupuncture has been effective for helping some people lose weight. According to Velu, (2010); Lickerman (2013), acupuncture needles are inserted at different points on the ear which represent different parts of the body. For this method to be effective one needle placed on the point that control appetite. Together, the acupuncture needles will tend to increase metabolic function which causes the body to burn fat. The needles also help suppress appetite which leads to eating less resulting in weight loss. However, it is better to establish healthy eating habits and to get regular exercise (Woodruff, 2013). Acupuncture and meditation class attendance could

also be combined to achieve weight loss.

Successful meditation for weight loss will require individual to learn good posture, learn proper breathing techniques and work on improving one's attitude (Velu, 2010; Lickerman, 2013). For best result under this approach, the individual need to schedule a set of time and location where he or she can relax and focus on meditating without being disturbed; cell phones need to be turned off, lower the light and commit to 20 to 30 minutes meditation session. Furthermore, for best result, plan on meditating for weight loss 5 days but if you are new to the process of meditation, purchase a meditation for weight loss CD or book until you become more skilled in the process (Gianetti, 2017). Meditation when combined with natural herbs could also be an alternative option for weight loss.

Natural herbs are practically and beneficial for alternative weight loss. Many individuals under this approach resort to choices like green tea, Cinnamon and Ginseng (Zelman, 2007). Green tea improves metabolic rate and enhance the level of fat oxidation in the body and can be consumed as a warm beverage in place of coffee or as an iced tea. Cinnamon stabilizes blood sugar which slows down the absorption of food which will make the individual feel full longer. It also reduces craving for sugar filled snacks and drinks. Ginseng on the other hand is popular among Asian countries and has long history of supporting weight loss. Research supports the effectiveness of ginseng against obesity. Moreover, ginseng is believed to help ward-off diabetes which is common in people who over weight (Fibov, 2017). Female teachers in public secondary schools in Enugu education zone could be utilizing these alternative options for weight control when they are pregnant. The use of these alternative weight control options especially by pregnant women could result in serious health consequences. Shekelle, Hardly & Morton 2003; Chang and Chiou (2014), identified adverse effects of ephedrine/caffeine supplementation as increased risk of psychiatric, autonomic or gastrointestinal symptoms and heart palpitations. It has not been successfully established if female teachers in public secondary schools in Enugu Education zone utilize the highlighted alternatives therapies or not, a gap which this study intends to fill. The study therefore investigates weight management options adopted by female teachers in public secondary schools in Enugu Education Zone, Enugu State during pregnancy.

Failure to keep appropriate body weight during pregnancy according to literature evidence could result to serious health consequences such as pregnancy induced hypertension (enclampsia), diabetes, certain kinds of cancers to mention but a few. The researcher has observed with keen interest high incidence of maternal and infant mortality in Nigeria and specifically in Enugu State. According to statistics, Nigeria has a maternal ratio of 525 per 100,000 live births accounting for 50% of global maternal deaths (Enugu State Health Reform Brochure, 2014). A recent study at Enugu State University of Science and Technology (ESUT) Teaching Hospital Enugu estimated that approximately 814 maternal death takes place annually in Nigeria (of which Enugu State and specifically Enugu education zone is a part and parcel of. The under 5 mortality ratio is 200 per 100 live birth (Statistics of Enugu State Health Reform Brochure, 2014). The researchers have also observed with keen interest the high Caesarean Section (C.S) rate and low breastfeeding rate among female teachers in public secondary schools in Enugu education zone when compared with women with a health BMI. This trend has far-reaching implications to health and academics. Although it has not been firmly established about the major cause of this, it could be due to poor management of weight by women during pregnancy or some other factors yet to be unveiled. To the best knowledge of the researchers, no study on weight management options adopted during pregnancy by female teachers in public secondary schools in Enugu Education Zone has been conducted in the time past which created a gap for this study to fill.

Purpose of the Study

The main purpose of the study is to investigate weight management options adopted by female teachers in public secondary schools in Enugu Education zone during pregnancy. Specifically the study sought to:

1. ascertain exercise options adopted for weight management during pregnancy by female teachers in secondary schools in Enugu education zone.
2. investigate dietary options adopted for weight management by female teachers in public secondary schools in Enugu education zone.
3. examine the alternative therapies adopted for weight management by female teachers in secondary schools in the zone.

Scope of the study

The study was delimited to female teachers who had given birth to at least a child and spent at least a term in their schools. The independent variables were delimited to location; while dependent variables were delimited to exercise, diet and alternative therapies.

Research Questions: the following research questions guided the investigations

1. What are the exercise management options adopted during pregnancy by female teachers in public

- secondary schools in Enugu education zone?
2. What are the dietary options adopted during pregnancy by female teachers in secondary schools in Enugu education zone?
 3. What are the alternative therapies adopted during pregnancy by female teachers in public secondary schools Enugu education zone?

Research Hypothesis

Location will not be a factor of variance regarding dietary options adopted by female teachers in public secondary schools in Enugu State during pregnancy.

Method

The study utilized descriptive survey research design method. The study was conducted in Enugu Education zone which has three Local education zones namely, Enugu North, Enugu East and Isi-uzo. Enugu North and Enugu East are classified as urban local education zones while Isi-uzo is classified rural (Project, Research & Statistics (PPSMB), Enugu, 2016). The choice of Enugu Education zone is based on the fact that the zone has large number of secondary schools scattered all over the three local education zones with high female teachers' staff strength beside, there is high incidence of maternal and infant mortality rate in the Zone. (Ministry of Health Enugu, 2016).

The Population for the Study: The population for the study consists of 5.066 female teachers in public secondary schools in Enugu education zone. (Research & Statistics Department PPSMB, Enugu, 2016).

Sample and Sampling Techniques

A sample of 507 female teachers in public secondary schools in Enugu education zone served as research respondents. The sample size was determined using the principles of the Rule of the thumb (Nwana, 1992). Multi-stage sampling procedure was deployed. First, stratified simple random sampling was utilized to stratify the local education zones into urban and rural local education zones. Enugu North and Enugu East were considered urban while Isi-Uzo was classified rural location. At the second stage, proportionate sampling was deployed to sample the number of respondents used for the study. This is based on the fact that the population of female teachers in the sampled schools were not equal and all the female teachers in Enugu education zone were not studied. Finally, using the staff nominal roll of each of the sampled schools, systematic random sampling technique was deployed till the required number of respondents was determined for each of the schools studied. All together 509 female teachers in public secondary schools in Enugu education zone served as research respondents.

The instrument for data collection was researchers' developed structured and validated questionnaire titled "Weight Management Options Questionnaire (WMOQ)". The instrument items were placed on 4-point scale of Very Great Extent (VGE), Great Extent (G E) Low Extent (L E), and Very Low Extent (VLE) respectively. The instrument was administered to the respondents on days agreed with them. The administered instrument was collected on the spot. Data analysis was carried out with frequency count, mean (\bar{x}), standard deviation (SD) and t-test statistic. For the research questions, mean response scores of 2.50 and above signifies management option adopted for overweight during pregnancy while mean response scores below 2.50 signifies not an option. For the hypothesis, if the calculated t-test value was greater or equal to table value, it was rejected but if the t-test (calculated) value was below the table value, the hypothesis was not upheld.

Presentation of Results

The results of weight management options during pregnancy among female teachers in public secondary schools in Enugu education zone are presented in tables below.

Research Question One

What are the exercise management options for overweight during pregnancy by female teachers in public secondary schools in Enugu education zone?

Table I: Response Distributions of the Respondents on Exercise Management Options During Pregnancy. n= 509

S/N	ITEM	Response Options							
		VGE	GE	LE	VLE	\bar{X}	SD	DEC	
3	I do road walk	77	95	164	171	2.15	.845	LE	
4	I jog/run on the treadmill	88	111	196	112	2.35	.972	LE	
5	I train with resistance machine weights	69	99	206	133	2.21	1.106	LE	
6	I take part in aerobic exercise with musical accompaniment	71	85	211	140	2.17	.845	LE	
7	I practice exercise to promote control of body and mind (yoga)	90	93	166	158	2.23	.944	LE	
8	I play racket games	21	32	297	157	1.84	.697	LE	
Grand Mean							2.16	LE	

Data presented on table I shows that out of 507 female teachers that responded to items 3-8 that deal with exercise management options adopted during pregnancy, item 3 had a mean (\bar{x})2.1, SD.845, item 4(x =2.35, SD .972), item 5(x = 2.21,SD,1.106), item 6(x = 2.17,SD,.845), item 7(x = 2.23,SD,.944), and item 8(x = 1.84,SD,.697). The total grand mean of 2.16 signifies low extent.

Research Question Two

What are the dietary options adopted for weight management during pregnancy by female teachers in public secondary schools in Enugu Education Zone?

Table 2: Mean Response Distributions of the Respondents on Dietary Options for Weight control during pregnancy. n =509

S/N	ITEM	Response Options							
		VGE	GE	LE	VLE	\bar{X}	SD	DEC	
9	I avoid carbohydrates and fatty foods	168	193	81	65	2.92	1.120	GE	
10	I take balanced diet	131	179	99	98	2.66	1.048	GE	
11	I take herbs	149	181	103	74	2.80	1.011	GE	
12	I take adequate water on daily basis	85	96	141	185	2.16	.851	LE	
13	I avoid sugary foods like packaged juices	90	97	173	147	2.26	.958	LE	
14	I take adequate fruits and vegetables	189	266	37	15	3.24	.628	GE	
15	I avoid soft drinks	82	94	199	132	2.25	.944	LE	
16	I neither consume alcohol nor smoke cigarette.	159	203	77	68	2.90	1.021	GE	
Grand Mean							2.65	.730	GE

From the data presented on table 2, out of 507 female teachers that responded to items 9 – 16 that deal with dietary options for weight management during pregnancy item 9 had a mean x (2.92, SD 1.120), item 10 (x =2.66, SD, 1.048), item 11 (x=2.80, SD, 1.011), item 12(x =2.16, SD, .851), item 13(x=2.26, SD, .958), item 14 (x=3.24, SD, .628), item 15(x=2.25, SD, .944) and item 16(x=2.90, SD, 1.021) respectively. The grand mean of 2.65, SD shows that diet is an option for weight management by female teachers. However, items 10, 11, 14 and 16 are not utilized by female teachers as options for weight management during pregnancy.

Research Question 3:

What are the alternative therapies adopted for weight control during pregnancy by female teachers in public secondary schools in Enugu education zone?

Table 3: Mean Response Distributions of the Respondents on alternative therapies for weight control during pregnancy. n= 509

S/N	ITEM	Response Options							
		VGE	GE	LE	VLE	\bar{X}	SD	DEC	
17	I undergo hypnosis with a well trained hypnotherapist.	86	69	211	141	2.20	.960	LE	
18	I undergo acupuncture treatment	92	75	192	148	2.22	1.106	LE	
19	I consume natural herbs	170	189	78	70	2.91	1.041	GE	
20	I attend meditation	-	48	199	260	1.58	.667	LE	
Grand mean							2.34	9.704	LE

Data presented on table 3 shows that out of 507 female teachers that responded to items 17 – 23 that deal with alternative therapies for weight management during pregnancy by female teachers, item 17 had x =2.20, SD, .960, item 18(x=2.22, SD, 1.106), item 19(x=2.91, SD, 1.041), and item 20(x=1.58, SD, .667). The grand mean of 2.23 signifies low extent. This means that alternative therapies are not options adopted for weight management during pregnancy by female teachers. However, item 19 is respectively are utilized by female teachers for weight management during pregnancy.

Table 4: t-test analysis of difference between the mean scores of urban and rural female teachers in public secondary schools in Enugu State regarding weight management option adopted during pregnancy.

Location	N	\bar{X}	S.D	T-cal val.	T-crit val.	Df	Dec
Urban	333	2.47	1.06	1.824	1.6525	507	Reject
Rural	176	1.91	1.18				Ho

The data presented on table 4 shows that the calculated t-value at .05 level of significance and 507 degree of freedom is 1.8241 while the critical t-value is 1.6525. This means that a significant difference exists between the mean ratings of urban and rural female teachers in public secondary schools in Enugu state regarding dietary options adopted during pregnancy.

The Summary of the findings are as follows:

1. Female teachers in public secondary school in Enugu Education Zone do not adopt exercises and alternative therapies as option for weight management during pregnancy.
2. Female teachers adopt dietary option for weight management during pregnancy.
3. Location is a factor of variance regarding dietary option for weight management during pregnancy in favour of the urban teachers.

Discussion

The findings on weight management options by female teachers in public secondary schools in Enugu Education Zone show that exercise was not considered by them as an option for weight management during pregnancy. This finding shows that female teachers in Enugu Education Zone dispositions to exercise falls short of the recommendations of Academy of Nutrition and Diabetics (2014); Livestrong.com, (2016), that pregnant mothers who walked one mile burned 89 calories (fat) during their exercise; 110 calories over the next few hours after the exercise. It is also not in tune with the report of Kramer and McDonald (2006), recommendation that regular aerobic exercise during pregnancy improve or maintain physical fitness, and that of Chemical Practice Obstetrics Committee of Canada (2012), advice that all women without contradictions should be encouraged to participate in aerobic exercise and strength-conditioning activities. However, despite, the approval of exercise for fitness and weight reduction in women during pregnancy, a contrast report by Domenjor, Kayser & Boulvain (2014), stated physical exercise during pregnancy does not decrease the risk of C.S during delivery. Perhaps, the low disposition of female teachers to exercise during pregnancy could be as a result of low awareness/attitude or some other factors, yet to be unveiled.

The findings also show that female teachers in public secondary resort to dietary options for weight management during pregnancy. This is also confirmed by the hypothesis that location is a factor of variance in favour of the urban female teachers regarding dietary option for weight management during pregnancy. This finding revealed that female teachers in the zone logically followed the recommendations of Beradi (2017), who pregnant women to be getting extra calories, more macro nutrition (Vitamins and Minerals during period of pregnancy). However, the author warned that alcohol, caffeine, cereal meat, artificial sweetness, high sugar intake to be avoided. According to the report, any pregnant woman wanting to keep appropriate body weight must avoid uncooked animal foods such as meat, sea foods and egg. The female teachers use of diet for weight management may present additional health consequences during this period and may need counseling in that regard. The female teachers use of diet for weight management during pregnancy is at variance with Academy of Nutrition & Diabetics (2014), report which suggested that expectant mothers should avoid or minimize alcohol, caffeine, cereal meats, artificial sweeteners, high sugar intake, using craving to justify poor food choices. According to the report, a pregnant woman wanting to keep appropriate body form should completely avoid raw or uncooked animal foods such as meat, sea and egg. The urban female teachers adoption of diet as management strategy for weight reduction during pregnant more than their rural counterparts could be a direct result of differentials in their socio-economic status. The urban female teachers have more variety of nutritious food to choose from than their rural counterparts which also may be attributable to the prevailing economic situation in the country that compel them to select few food items or it could also be some other factors yet to be unveiled.

One of the findings also revealed that female teachers in public secondary schools in Enugu State did not consider alternative therapies as options for weight management during pregnancy. This finding shows that females teachers in Enugu Education Zone did not follow the guidelines provided by Libov (2017), that alternative ways to lose weight naturally should include: eating whole, single ingredient foods, avoidance of processed foods, limiting intake of added sugar, regular consumption of water and taking coffee as well supplementing with gluconnan. It also shows that females teachers in the Zone did not follow the advice handed down by Taboola (2013), report which stated that hypnosis could be an option for weight management beside exercise and diet. Female teachers negative dispositions to alternative therapies did not follow the recommendations of Lickman (2013), Velu (2010), that Acupuncture in which needles are inserted at different points on the ear which represent different parts of the body. The report stated that the acupuncture needles

increase the metabolic function which helps to suppress appetite. Female teachers disapproval of alternative therapies also did not receive the approval of Gianaeti (2017) and Zelman (2007), which maintained that meditation, and use of natural herbs (green tea, Ginseng and Cinnamon) as alternative to weight loss. The reasons for these differences could be due to the fact that some of the strategies are nonexistent in our environment and are relatively unknown to female teachers. Besides, women in this part of Africa may not be familiar with them hence their disapproval/low utilization.

Conclusions

Arising from the findings on weight management options adopted by female teachers in public secondary schools in Enugu education zone, the study concludes that female teachers in the zone consider neither exercise nor alternative therapies as options for weight management during pregnancy but in alternative resort to dieting during this period, a trend that must be reversed.

Recommendations

Based on the findings and conclusions of the study, the researchers wish to recommend thus:

1. The antenatal clinic meetings should emphasize more of physical fitness pursuit in order to assist women keep appropriate body form and to also facilitate smooth and quick delivery.
2. Nutritional education content of the antenatal clinic meetings be expanded to sensitize women on foods to eat and those to avoid when they are pregnant.
3. Government should institute wellness pursuit within the school environment to enable expectant mothers engage in light aerobic exercises such as taking a walk on the treadmill.
4. The state worker's monthly fitness and wellness programme organized by the Ministry of Youth and Sports be extended to schools to spur women engage in exercise

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