

Level of Knowledge possessed by Physical Education Teachers on obesity in Secondary Schools in Gboko Local Government Area of Benue State

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Abstract

Obesity, a condition of possessing excess body fat was once regarded as a problem only in high income countries but now on the increase in developing countries of which Nigeria is part of. The study therefore determined the level of knowledge possessed by physical education teachers on obesity in secondary schools in Gboko L.G.A. of Benue state. Data from 15 P.E teachers were analysed using SPSS while frequencies and percentages in line with Okafor (1997) principles of determining level of knowledge used. Among other results, the P.E teachers were found to possess high level of knowledge on the concept of obesity; very low level of knowledge on the effects of obesity; and factors such as attendance to conferences and access to internet were found to influence their level of knowledge. In conclusion, there is paramount need to organize workshops for the teachers on healthy weight to enhance the SGD 3.

Keywords: Obesity, knowledge, level of knowledge, physical education and physical education teachers

Introduction

Globally, there are 1.5billion adults who are either overweight or obese, a number expected to increase to 3billion by 2030 (Chan, 2017). According to Centre for Disease Control and Prevention report (2017), in United States as at 2008 the estimated annual medical cost of obesity was \$147billion which shows that the medical cost for people who have obesity were \$1,429million higher than those of normal weight.

Obesity is a major health problem which is prevalent in developing countries. Banfarle and Cavaliere (2009) noted that in recent years, obesity rates in the European Union countries, which Nigeria is part of, have increased dramatically, leading to serious consequences in terms of direct health care costs and productivity losses, and indicating the existence of negative externality connected with obesity. For instance, in Mauritius, South East coast of Africa recent studies indicate clearly that obesity is on the rise. According to the report of Institute of Health Metrics and Evaluation (2014), the rate of obesity in developing countries ballooned from 857million in 1980 to 2.1billion in 2013. World Health Organization, WHO, (2015) also estimates that 12.7% of African children will be overweight/obese by 2020 as compared to 8.5% in 2010. In Nigeria, Chukwuonye et al (2013) reported that the prevalence of overweight ranged from 20.3% - 35.1% while the prevalence of obesity ranged from 8.1% -

22.2%. Furthermore, Okafor, Gezawa, Sabir, Raimi, Emang (2015) in a study found out that 17% and 31% of the sample used for the study were overweight and obese respectively, and overweight and obesity increased to peak in adolescents' age brackets. The study concluded that there is need to institute measures that will check the development of overweight and obesity early enough to curb their rates.

From the data presented above, there is clear indication that obesity is on the increase in developing countries especially among adolescents, and these adolescents are usually found in secondary schools where qualified physical education teachers are. Physical education teachers are professionals as it concerns structured physical activities which are capable of enhancing healthy weight and strengthening sustainable development goal of good health and wellbeing among students. However, there is obviously high rate of obesity among adolescents within the age range of secondary school even though there are professionals in healthy weight (P.E teachers) the various schools, therefore, there arises a need to ascertain the level of knowledge possessed by Physical Education Teachers on obesity in Secondary Schools in Gboko Local Government Area of Benue State.

Literature review and theoretical framework

According to Sturn (2007), obesity is the act of being very fat, in a way that is not healthy. There is a certain amount of body fat necessary for storing energy, heat insulation, shock absorption and other body functions, but when an individual possess body fat beyond the amount needed, the individual is said to be obese. WHO (2015) defined obesity as a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health. Nigeria Female Obesity prevalence study (2015) stated that obesity is an abnormal or excessive fat accumulation that presents a risk to health. In consonance with the authors, obesity occurs when an individual possesses more body fat that required for healthy living. Population measure of obesity is the body mass index (BMI); a person's weight (in kilograms) divided by square of his/her height (in metre). A person with a BMI of 30 or more is generally considered obese while a person with a BMI equal to or more than 25 is considered overweight. There are many predictors of obesity.

Obesity as a health condition can be caused by several factors and lifestyle. Globally, fundamental causes of obesity and overweight is an energy imbalance between calories consumed and calories expended; an increased intake of energy-dense foods that are high in fat; and increased in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization. With the advent of television, computers, video games, remote controls, washing machines, dish washers and other modern convenience devices, majority of people live sedentary lifestyle which is a major predictor of obesity. Bhargave (2007) listed different factors that can lead to obesity and they include; genetics, overeating, slow metabolism, physical inactivity, psychological factors (some people tend to eat excessively in response to emotions such as boredom, sadness, stress or anger), medications, diseases (such as insulin resistance, hypothyroidism, polycystic ovary syndrome, etc), and age (ageing comes with muscle loss which can slow down the rate at which the body burn calories and if caloric intake is not reduced, there will be weight gain). According to Kopelman, Dietx and Caterson (2009), certain medicines may cause one to gain weight, and such medicines are; some corticosteroids, anti-depressants and seizure medicines.

These medicines have the capability of slowing down the rate at which the body burns calories, increase appetite or cause the body to hold on to extra water. Other factors associated with obesity in the assertion of Pollack (2013) include; ethnicity (ethnicity factors may influence the age of onset and the rapidity of weight gain), childhood obesity (a person's weight during childhood, the teenage years and early adulthood may also influence the development of adult obesity), and hormones (women tend to gain weight especially during certain events such as pregnancy, menopause, and in some cases, with the use of oral contraceptives). In agreement with authors, in-take of contraceptives and drugs for the treatment of some illnesses such as seizures can lead to obesity. Also, some culture belief that before that attainment of early adolescent, there is need to be fat which is termed looking healthy in order to attract a suitor for females or appear big enough to provide and protect a future partner for males, this practice leads to overfeeding and consequently obesity. This health condition negatively affects peoples' wellbeing generally.

Obesity has several devastating effects on humans. When one is obese according to Kushner (2007), there is high degree of susceptibility to gout, gallbladder disease, high blood pressure, diabetes, joint problems, sleep apnea, respiratory problems, cancer and psychological imbalance such as feeling of discrimination. Some effects of obesity on the health of the obese include; more cancers, infertility, pre-term birth rate, less shuteye, tough love and medical gap. Agreeing with the author, obesity which has to do with having excess body fat can lead to numerous health challenges and lead to poor health among the individual, then giving rise to health-related diseases. Also, obesity affects the physical appearance of the obese as such creating the sense of being unattractive and low self-esteem. In addition, Luppino et al (2010) asserted that obesity increases the likelihood of various diseases and conditions, particularly, cardiovascular disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, infertility, osteoarthritis and depression. In line with the authors, obesity negatively affects the self-esteem of the obese. When an individual is obese, he/she finds it hard to socialize among peers because of the un-friendly statements about outlook. Obesity also affects the general wellbeing of the obese thereby hindering optimal good health. In spite of these negative effects, there are numerous ways obesity can be effectively handled.

Engaging in physical activities regularly is a successful way of handling obesity. To Hardman (2009), engaging in physical activity improves health and wellbeing; reduces stress, strengthens the heart and lungs, increases energy levels, helps to maintain and achieve a healthy body weight, and improves one's outlook on life. Engagement in regular physical activity is essential for the accomplishment of daily tasks with greater ease and comfort, and with less fatigue. In the opinion of Chiles and Wattum (2010), participating in physical activity helps participants to burn calories and reduce body fat, control and maintain ideal weight, improve fitness and ability to perform daily activities, prevent diseases, and reduce appetite. Obesity also can be treated through a combination of social changes and choices such as changes to diet. Diet quality can be improved by reducing the consumption of energy-dense foods such as those foods high in fat and sugars, and by increasing the intake of dietary fibre (WHO, 2015). Medications can be used to treat obesity, along with a suitable diet to reduce appetite or decrease fat absorption. Medicines (drugs) can be successfully used to achieve reduced weight though it should be the last resort and depending on the individual being at risk of any illness or disease. According to Colquitt, Pickett, Loveman and Frampton (2015), if diet, exercise and

medications are not effective in treating obesity, a gastric ballon or surgery may be performed to reduce stomach volume or length of the intestines, leading to feeling full earlier or a reduced ability to absorb nutrients from food. However, for a desirable result to be achieved in the attaining and maintenance healthy weight among adolescents who are usually found in secondary schools, depends so much on the level of knowledge possessed by the physical education teachers.

Physical education (P.E) is a subject which involves learning through structured physical activities. Physical education is a compulsory subject especially at the junior secondary school level according to the National Policy on Education in Nigeria, because of its ability to inculcate healthy living and lifestyle among students. Physical education teachers are educators who instruct students in health, fitness and sports (Study.com, 2015). These physical education teachers may work in private or public schools and required skills include, instructing, public speaking, active listening and learning, critical thinking, monitoring and assessment. Sokanu (2017) stated that physical education teachers engage students in much more than game play because recent developments have steered the physical education curriculum towards the goal of overall wellness, and the PE teachers now incorporate health and nutrition topics into their classes. The physical education teacher has the following responsibilities to the students: providing maximum physical activity time within the class period, teach skills and activities transfer into physical activities outside physical education class, motivate students to participate in prescribed physical activities and as well evaluate the students' performance, attitude and level of physical fitness (Sokanu, 2017). From the above stated duties of physical education teachers, it is obvious that these teachers are not measuring up to expectations as it concerns delivery of classroom instructions and physical exercises with aim of ensuring sound health and wellbeing which includes attainment of healthy weight among students. This situation maybe as a result of influences in their knowledge of obesity.

There are factors that influence level of knowledge. In a study which investigated the knowledge level of farmers about social forestry by Kaushal (2012) found that association variables such as education, sources of information utilized, innovation process, size of land and social participation influence the knowledge level of the farmers. Also, Mondal, Nazrul and Howard (2014) carried out a study to identify the knowledge level of tuberculosis and investigate the factors associated with knowledge level among the TB patients in Bangladesh found that sex, age, education status, and TB type were significantly associated with knowledge level of the TB patients. Therefore, this study finds it paramount to investigate the factors that influence the level of knowledge possess by physical education teachers in the area of study. Also, imbedded in this paper is a theory of anchor.

Theory of reasoned action is used as theoretical framework. The theory was propounded by Fishbein and Iczk in the year 1975. According to Azjen and Madden (1986), intention to perform a certain behaviour precedes the actual behaviour. The theory serves to understand an individual's voluntary behaviour (Doswell, Braxter, Cha and Kim, 2011). Furthermore, theory of reasoned action says that a person's intention to perform a behaviour is the main predictor of whether or not they actually perform that behaviour. This theory was used to interrogate the research questions being that if physical education teachers intend to ensure good health and wellness among the students, they would enhance their level of knowledge on issues that pertains to health such as

obesity. Enhancing level of knowledge would also make the physical education teachers to encourage these secondary school adolescents to abstain from lifestyles that predispose them to overweight and obesity.

Practically, physical education teachers instruct students on different structured physical activities which are important to the achievement of overall wellness and healthy weight. By motivating students to engage in regular structured physical activities, the students directly and indirectly achieve and maintain healthy weight thereby reducing the rate of obesity and other associated health conditions. However, from available data as presented initially, the rate of obesity among adolescents, which are usually found in secondary schools, is on the increase in Nigeria. There seems to be many obese and overweight adolescents in secondary schools in Benue state, especially in Gboko L.G.A. where there are lots of qualified physical education teachers in the various secondary schools in the state. This situation if not urgently handled would give rise to increased health-related illnesses associated with obesity, hence, the study is geared to: 1) to determine the level of knowledge of concept of obesity possessed by P.E. teachers in the secondary schools; 2) to determine the level of knowledge of causes of obesity possessed by P.E. teachers in the secondary schools; 3) to determine the level of knowledge of effects of obesity possessed by P.E. teachers in the secondary schools; 4) to determine the level of knowledge on ways of treating obesity possessed by P.E. teachers in the secondary schools; and 5) to determine the factors that influence level of knowledge possessed by P.E. teachers on obesity in the secondary schools.

Method

The study adopted cross-sectional research design. The population consisted of fifteen (15) physical education teachers in the thirteen government-owned and missionary secondary schools in the local government area, and the choice of schools is based on the fact that private secondary schools do not have qualified physical education teachers that teaches the subject. Researchers' structured and validated questionnaire titled Level of Knowledge of Obesity Questionnaire (LKOQ) was used to collect quantitative data used for analyses. Frequencies and percentages were used for data analyzes while Ashurr (1977) bench mark for determining level of knowledge modified by Okafor (1997) was used to establish the level of knowledge of obesity possessed by P.E. teachers as follows:

Less than 40%	=	Very low level of knowledge
40 – 49%	=	Low level of knowledge
50 – 59%	=	Average level of knowledge
60 – 79%	=	High level of knowledge
80% and above	=	Very high level of knowledge

Results

Research Question 1

What is the level of knowledge of concept of obesity possessed by P.E. teachers in secondary schools in Gboko L.G.A?

Table 1: Level of knowledge of the concept of obesity (n = 15)

Items	Responses			
	Correct F	%	Incorrect F	%
1. Obesity means excess body weight	7	47	8	53
2. Obesity is being unhealthily fat	10	67	5	33
3. Obesity is a condition of excess fat in the body	14	93	1	7
4. Obesity involves more energy IN than OUT	11	73	4	27
Average		70		

Table I shows that greater percentage of the respondents indicated that obesity is a condition of excess unhealthy fat in the body, and also involve more energy IN than OUT. The average of 70% was recorded from the correct responses which shows that the P.E. teachers in study area possess high level of knowledge of the concept of obesity.

Research Question 2

What is the level of knowledge of causes of obesity possessed by P.E teachers in secondary schools in Gboko L.G.A?

Table 2: Level of knowledge of causes of obesity (n = 15)

Items	Responses			
	Correct F	%	Incorrect F	%
5. Lack of adequate night sleep	3	20	12	80
6. Excess consumption of carbohydrate foods	15	100	-	-
7. Medications or drugs	6	40	9	60
8. Health conditions or illness	11	73	4	27
Average		58.3		

Data in table 2 shows the responses of the P.E. teachers on the causes of obesity in which 100% of the teachers indicated that excess consumption of carbohydrate foods cause obesity. However, only 20% of the respondents agreed that lack of enough sleep is a cause of obesity. An average of 58.3 was recorded which shows that the P.E. teachers possess an average level of knowledge regarding causes of obesity.

Research Question 3

What is the level of knowledge of effects of obesity possessed by P.E. teachers in Gboko L.G.A?

Table 3
Level of Knowledge of effects of obesity (n = 15)

Items	Responses			
	Correct F	%	Incorrect F	%
9. Heart diseases and high blood pressure	4	27	11	73
10. Stroke, body pains and difficulty with physical functioning of the body	6	40	9	60
11. Infertility	3	20	12	80
12. Low quality of life	8	53	7	47
Average		35		

Data in table 3 show the responses of the P.E. teachers regarding the effects of obesity and 53% of the teachers indicated that low quality of life is an effect of obesity on individuals. However, on the average, 35% was recorded which shows very low level of knowledge on the effects of obesity among the P.E. teachers.

Research Question 4

What is the level of knowledge on ways of treating obesity possessed by P.E. teachers in secondary schools in Gboko L.G.A.?

Table 4

Level of knowledge on ways of treating obesity (n = 15)

Items	Responses			
	Correct F	%	Incorrect F	%
13. Engaging in regular physical activities	15	100	-	-
14. Taking weight loss drugs	9	60	6	40
15. Changing life style	13	87	2	13
16. Less consumption of starchy foods	14	93	1	7
Average		85		

Table 4 shows the responses of the P.E. teachers on the by which obesity can be treated. The result shows that 100% of the teachers indicated that obesity can be treated through engaging in regular physical activities while 93% indicated that less consumption of starchy foods can as well effectively handle the health condition. An average of 85% was recorded which shows that the P.E. teachers possess very high level of knowledge on ways of treating obesity.

Research Question 5

What are the factors that influence level of knowledge possessed by P.E teachers on obesity in secondary schools in Gboko L.G.A.?

Table 5
Factors that influence level of knowledge (n = 15)

Items	F	%
1. Education level	5	33
2. Gender of P.E teacher	3	20
3. Age	7	47
4. Attendance to conferences on Physical Education	9	60
5. Years of teaching	6	40
6. ICT capability	11	73
7. Access to internet	12	80

Data in table 5 show the factors that influence level of knowledge possessed by physical education teachers. From the table, access to internet recorded the greatest percentage of 80% followed by ICT capability which recorded 75%. However, gender of the P.E teachers pose little or no influence on the level of knowledge possessed by the P.E. teachers on obesity.

Discussions

On the concept of obesity, the physical education teachers possess high level of knowledge in which 93% of the respondents indicated that the health condition has to do with excess fat in the body. Practically, obesity is a health condition in which one possesses excess body fat, where the energy IN does not commensurate with energy OUT. This result validates WHO (2015) definition of obesity, which is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health. However, one effects the P.E. teachers to possess very high level of knowledge on the concept of obesity being that they are professionals in the aspect of human physiology and anatomy which involves healthy weight. This result shows that the physical education teachers are not grounded in knowledge as it concerns obesity which is a big worry being that obesity is readily on the increase among adolescents under their care.

The result on the level of knowledge as regards the causes of obesity, an average of 58.3% was recorded which indicates an average level of knowledge. This shows that the P.E. teachers do not have in-depth knowledge of the things that predisposes one to obesity. Variables such lack of enough sleep and taking medications were indicated by greater percentage of the physical education teachers as not being capable of leading to that health condition. However, findings such as Kopelman, Dietz and Caterson (2009) stated that certain medicines may cause one to gain excess weight and examples of such medicines include; some corticosteroids, anti-depressants and seizure medicines. Also, one expects the P.E. teachers to be grounded in knowledge of causes of obesity being that they are experts in the field of human kinetics which include ideal weight attainment and management. With this result, it shows that these human kinetics professionals are lackadaisical towards updating their knowledge on the

causes of obesity and this may explain why secondary school adolescents are becoming increasingly obese.

The result on level of knowledge regarding the effects of obesity by the physical education teachers showed a very low level of knowledge among the teachers. The result is not by any means expected because as P.E. teachers (professionals), one expects them to possess a very in-depth knowledge on the different effects obesity has on individuals, most especially secondary schools' students. It is surprising that 80% of the P.E. teachers indicated that obesity does not lead to infertility. The result contradicts Luppino et al (2010) who enumerated that effects of obesity to include; likelihood of various diseases and conditions such as cardiovascular disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, infertility, osteoarthritis and depression. With this very low level of knowledge by these teachers on the effects of obesity, it would be difficult for the teachers to effectively advise their students who are becoming overweight/obese on the dangers associated with the health condition.

Level of knowledge regarding ways of treating obesity shows that the P.E. teachers recorded an average of 85% which shows a very high level of knowledge among the teachers. This result is in agreement with Chiles and Wattum (2010) who asserted that participating in physical activities regularly helps one to burn calories and reduce body fat, control and maintain ideal weight, improve fitness and ability to perform daily activities, prevent diseases, and reduce appetites. Regular engagement in physical activities recorded 100% among the teachers as a way of effectively handling such health condition. Practically, when one engages in physical activities very often (that is 4 – 5 times weekly), there is great tendency of burning unhealthy calories which is a predisposing factor to obesity.

On the factors that influence level of knowledge possessed by the physical education teachers, such factors as access to internet, ICT capability and attendance to conferences in physical education recorded 80%, 73% and 60% respectively. The result shows that P.E. teachers lack of access to internet facility, poor ICT capability and non-attendance to organized conferences on human kinetics, inhibits the level of knowledge they possess regarding obesity. This finding shows factors other than sex, age and education status to influence level of knowledge as previously reported by Mondal, Nazrul and Howard (2014). Without internet access, there is practically no way physical education teachers would be abreast with the rate of obesity and other preventable health conditions, thereby, further limiting the enhancement of sustainable development goal of good health and wellbeing.

Conclusions

In conclusion, this study has provided an empirical evidence on level of knowledge possessed by physical education teachers as regards obesity which is an increasing health condition among developing countries of which Nigeria is part of. With the high rate of obesity among adolescents of who are mostly found in secondary schools, and the very low level of knowledge recorded on the effects

of obesity among the P.E. teachers as the data show, there is urgent need for workshops and enlightenment programmes for P.E. teachers on obesity and the many dangers it poses to wellbeing. The implication of this finding is that physical education teachers would not be able to educate their students appropriately on the dangers of obesity and adequately advise obese adolescents (students) on the need to attain healthy weight. From the result obtained, ICT capability and accessibility remain growing need in Nigeria, therefore, it is paramount to organize ICT based workshops teachers, especially P.E. teachers in order to enhance their accessibility to wide range of information on health and wellbeing. Finally, with this empirical evidence, the quest to achieve post 2015 development goals especially as it pertains to good health and wellbeing (SDG 3) would be bleak in Nigeria.

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