
Status of Secondary School Teacher Retirees and their Spouses in the Niger Delta Region of Nigeria Toward Achieving Healthy People 2010 Objectives: Implications For Health Promotion Practitioners

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Abstract

The purpose of the study was to assess the status of secondary school teachers retirees and their spouses 38 to 64 years of age relative to select Healthy People 2010 objectives and to identify socio-demographic characteristics associated with select health behaviours in the Niger Delta region of Nigeria. The cross-sectional analyses with self-reported standardized measures were utilized. Data for this study were self-reported responses of the Population Health Survey. Dichotomous variables were created to indicate whether the Healthy People 2010 objectives had been met. Each objective was measurable with the survey by using the definitions set forth in Healthy People 2010. These objectives included healthy weight and obesity based on body mass index (height and weight); daily fruit, vegetable and grain product consumptions; physical inactivity; moderate physical activity and vigorous physical activity and binge drinking. Health interventions are needed to improve the health status of this population and to achieve the goals set forth in Healthy People 2010.

Healthy People 2010: Understanding improving health, issued in 2000 is a comprehensive nationwide health promotion and disease prevention scheme designed to promote health and prevent illness, disability and premature death (US Department of Health and Human Services, 2000). These health promotion and disease prevention scheme designed to promote health and prevent illness, disability and premature death can be applicable to Nigeria. These objectives were adapted for this study in Nigeria. The two overarching goals of *Healthy People 2010* are to increase the life span and quality of life and to eliminate health disparities among Nigerians. To achieve these

goals, the US Department of Health and Human Services has identified 467 objectives grouped into 28 focus areas to be met by the year 2010.

Health promotion and disease prevention have long been a priority with the Federal Ministry of Education. The Ministry general health promotion directive focuses on smoking prevention and cessation, general physical fitness, nutrition, stress management, alcohol and other drug abuse and hypertension. The directive targeted active duty and retired personnel (teachers inclusive), their families and other employees in an attempt to improve and maintain readiness and the quality of life of the personnel. It is important that teacher retirees and other beneficiaries of the Teacher's Health System remain healthy not only to maintain a satisfactory quality of life, but also to reduce the overall burden of preventable diseases and its associated expenses.

The Ministry of Education is one of the largest provider of education in Nigeria with approximately 6.4 million teachers comprising of active duty service members and retired service members. The Ministry carried out a survey which sampled retired teachers and their spouses to provide information on the health status of this population since their retirement benefits come years after they might have retired with the effect that some die without receiving them. The population in question includes men and women who served at least 25 years in the profession and retired. They were subjected to weight and fitness standards, received regular health care and were screened for numerous health conditions throughout their active duty careers. The purpose of this study was to establish the status of retiree teachers and their similarly aged spouses toward *Healthy People 2010* objectives and to identify socio-demographic characteristics associated with various health behaviours. Specifically, the study sought to find out:

1. the socio-demographic characteristics (%) by gender of teacher retirees and their spouses
2. prevalence of teacher retirees and their spouses who met *Healthy People 2010* objectives and *Healthy People 2010* objectives targets.
3. association between socio-economic characteristics and failure to meet select *Healthy People 2010* objectives among teacher retirees and their spouses.
4. association between socio-demographic characteristics and failure to meet select *Healthy People 2010* health-risk objectives among teacher retirees and their spouses.

Methods

The study adopted the cross-sectional survey research design. This helped to collect health data self-reported by teacher retirees and their spouse between 38 and 64 years of age. The study population comprised a total of 10,446 retirees teachers and their spouses drawn from three states in the Niger Delta region of Nigeria. The study sample comprised 6043 drawn Akwa Ibom, Bayelsa and Rivers State. The simple random sampling technique was used to select the states.

The sampling plan followed a stratified random sampling design to produce estimates representing the states. Stratification was performed according to the state to sample equal numbers of beneficiaries. The population health survey consisted of questions derived from the National health Interview Survey and the National Household Survey on Drug Abuse which was adapted for use to validate questions and to allow bench marking to the teaching population. There are no validity studies to the best of the knowledge of the researcher published to date for these questions. Domains included in the population Health Survey were health status, everyday activities and limitations, current physical leisure activity, health promotion, nutrition and weight control, feelings and mental health, social support and socio-demographics.

The *Healthy People 2010* objectives included in the survey and assessed in this study are: healthy weight in adults, obesity in adults, fruit consumption, vegetable consumption, grain-product consumption, physical inactivity, moderate physical activity, vigorous physical inactivity and binge drinking. Several of these objectives including moderate physical activity, obesity in adults and binge drinking are leading health indicators for the nation. These objectives were included in the study because they are health behaviours and therefore are modifiable interventions. Each objective was measurable with the survey by using the definitions set forth in *Healthy People 2010* (US Department of Health and Human Services 2000) which was adapted for this study. To measure healthy weight and obesity in adults, body mass index (BMI) was calculated from self-reported weight in kilograms divided by height in meters squared (kg/m^2) and was classified according to the 1998 National Heart, Lung and Blood Institute weight classes by BMI: underweight ($\text{BMI} < 18.5 \text{ kg/m}^2$), normal weight ($\text{BMI} 18.5\text{-}24.9 \text{ kg/m}^2$), overweight ($\text{BMI} 25.0 - 29.9 \text{ kg/m}^2$), and obese ($\text{BMI} \geq 30.0 \text{ kg/m}^2$) (National Institute for Health, Heart, Lung and Blood Institute 1998). Dichotomous variables were created to indicate whether each objective had been met. SAS (version 8.2) and SUDAAN (version 8.0.2) were used for data analyses. Bivariate analyses were used to describe the sociodemographic characteristics of the study population and to calculate age-adjusted estimates for the *Healthy People 2010* objectives. Multivariate logistic regression was created to evaluate the relationship between sociodemographic characteristics and failure to meet the *Healthy People 2010* objectives. The following demographic characteristics were included in the multivariate model: gender (male, female), highest educational level completed (Grade II, N.C.E, B.Ed/B.Sc, M.Sc), annual income (more than N600,000, N300,000 to N400,000 and less than N200,000), and general health status (excellent, very good, fair and poor). The data did not allow for differences between teacher retirees and their spouses.

Results

Table 1

Socio Demographic Characteristics (%) by Gender of Teacher Retirees and Their Spouses

	Men	Women	Total
Sample Size	3096	2947	6043
Age (years)			Average
38 – 49	23.39	27.11	25.20
50 – 59	41.05	43.20	42.10
60 – 64	35.56	29.69	32.70
Education			
M.Sc or more	38.63	28.74	33.81
B.Ed/B.Sc	42.60	36.17	39.47
N.C.E	18.35	28.64	23.37
Grade II	0.42	6.45	3.36
Annual Income			
More than N600,000	39.57	39.12	39.35
N400,000 – N350,000	54.10	54.36	54.23
Less than N200,000	6.33	6.52	6.42
General Health Status			
Excellent	11.98	13.54	12.74
Very Good	31.78	35.09	33.39
Good	42.54	38.62	40.63
Fair	11.56	10.62	11.10
Poor	2.13	2.14	2.13

Data in Table 1 shows the socio demographic characteristics of the study population. Majority of the respondents who had B.Sc/B.Ed or M.Sc etc. had an annual income between N200,000 and N600,000 and reported good or very good general health status. There were no notable socio demographic differences between men and women.

Table 2

Prevalence of Teacher Retirees and their Spouses who met *Healthy People 2010* objectives and *Healthy People 2010* objective targets

Objectives	Study Population	2010 Targets (%)
Health Promoting Behaviours		
Healthy weight in adults	27.9 (1.6)	≥ 60
Food consumption	49.0 (1.7)	≥ 75
Vegetable consumption	29.1 (1.6)	≥ 50
Grain-product consumption	3.7 (0.8)	≥ 50
Moderate physical activity	6.6 (0.5)	≥ 50
Vigorous physical activity	29.3 (1.6)	≥ 30
Health-risk behaviors		
Obesity in adults	31.7 (1.6)	≤ 15
Physical inactivity	24.3 (1.6)	≤ 20
Binge drinking	14.0 (1.2)	≤ 6

Data in Table 2 presents the objectives assessed in this study, the *Healthy People 2010* target and the proportion of the study population who met the objectives. Observations show that the study population had not yet met any of the targets included in this study.

Table 3 presents the multivariate prevalence odds ratio for not meeting select health promotion objectives. The results of these analyses indicate that certain socio demographic characteristics are associated with not meeting the following targets: healthy weight – male, B.Sc/B.Ed and very good, good, fair or poor general health status, fruit consumption – male, M.Sc or more, B.Ed/B.Sc, N.C.E and Grade II, and good or fair general health status; vegetable consumption – male, M.Sc or more, B.Ed/B.Sc etc and very good, good and fair general health status; grain-product consumption – ages 50 – 59 years and B.Ed/B.Sc; moderate physical activity, male and good, fair or poor general health status; vigorous physical activity – ages 50 – 59, N.C.E and Grade II, annual income between N200,000 and N600,000 and very good, good, fair or poor general health status.

Table 4
Association between Socio demographic Characteristics and Failure to Meet Select Healthy People 2010 Health Risk Objectives among Teacher Retirees and Their spouses Prevalence Odds Ratio (95%) Confidence Interval).

	Obesity adults	in Physical inactivity	Binge Drinking
Gender			
Male	1.13 (1.00, 1.27)	0.97 (0.85, 1.11)	3.70 (3.08, 4.45)
Female	1.00	1.00	1.00
Age (years)	1.00	1.00	1.00
38 – 49	1.93 (0.81, 1.08)	1.11 (0.94, 1.30)	0.74 (0.61, 0.90)
50 – 59	0.72 (0.61, 0.84)	0.83 (0.70, 0.99)	0.58 (0.45, 0.69)
60 – 64	1.00	1.00	1.00
Education	1.26 (1.09, 1.46)	1.49 (1.25, 1.76)	1.18 (0.97, 1.44)
M.Sc or more	1.22 (1.03, 1.45)	1.93 (1.59, 2.34)	1.27 (0.99, 1.62)
B.Ed/B.Sc.	0.93 (0.65, 1.32)	2.05 (1.42, 2.96)	1.59 (0.90, 2.82)
N.C.E			
Grade II	1.00	1.00	1.00
	1.22 (1.07, 1.40)	1.16 (1.00, 1.35)	0.88 (0.73, 1.06)
Annual Income	0.89 (0.69, 1.16)	1.13 (0.86, 1.49)	1.01 (0.88, 1.73)
More than			
Less than	1.00	1.00	1.00
	2.39 (1.86, 3.07)	1.62 (1.21, 2.17)	0.97 (0.74, 1.28)
General Health Status	4.01 (3.13, 5.13)	3.10 (2.34, 4.11)	1.14 (0.87, 1.48)
Excellent	6.56 (4.95, 8.71)	5.89 (4.30, 8.05)	1.17 (0.84, 1.64)
Very Good	5.80 (3.78, 8.92)	13.75 (8.68, 21.79)	0.75 (0.38, 1.45)
Good			
Fair			
Poor			

Table 4 presents the multivariate prevalence odd ratio for not meeting select health risk behaviour objectives. The result shows that certain socio-demographic characteristics are associated with not meeting the following targets: obesity – male, M.Sc, B.Ed/B.Sc, annual income between N200,000 and N600,000 and very good, good, fair or poor general health status; physical inactivity – M.Sc, B.Ed/B.Sc, annual income between N200,000 and N600,000 and very good, good, fair, or poor general health status, binge drinking – male.

Discussion

The teacher retirees and their spouses have not met any of the *Healthy People 2010* objectives included in this study, several associations between socio-demographic characteristics of individuals and their failure to meet the objectives have been identified. Subsets of this population who were found to be at significantly greater risk for failure to meet *Healthy People 2010* objectives included men with less than a university degree and persons with less-than-excellent health status. The Ministry of education has historically emphasized health promotion and disease prevention with the teaching profession through seminar, conferences and workshops. In addition to these health promotion and disease prevention efforts, various non government organizations (NGOs) have offered numerous behavioural health care services including aversion therapy for problem drinking, behavioural health services for obesity, nutrition counseling, life-style modification counseling and various educational programmes. These NGOs also offer a variety of health promoting opportunities including fitness, exercise and educational classes focusing on cholesterol control, weight loss, nutrition as well as stress management.

There is a well established association between obesity and numerous co-morbidities, such as high blood pressure, high cholesterol, type 2 diabetes, heart disease, stroke, gall bladder diseases, arthritis, depression and certain types of cancer (Field & Must (2001); Must, Spadano and Coakley (1990); Sunyer (1993). Interventions aimed at reducing the prevalence of obesity and increasing the prevalence of healthy weight may be cost-effective programmes (Kress, Hartzell, Peterson, Williams and Fagard, 2006). These interventions may include education about healthy diets and regular physical activity because this population did not achieve the *Healthy People 2010* objectives for moderate or vigorous physical activity or fruit, vegetable or grain-product consumption. Research has suggested that increasing fruit and vegetable consumption is associated with lower risk of becoming obese (He, Ku, Hu, FF, Colditz et al, 2004). Clinical guidelines to reduce the prevalence of over weight and obesity call for both an exercise programme of at least 30 minutes of moderate daily exercise and reduced caloric intake (Clinical guidelines on the identification, evaluation and treatment of overweight and obesity in adults, 1998).

The benefits of physical activity are well established, including decreasing risks of type 2 diabetes (Kriska, Saremi, Hanson, 2003), coronary heart disease (Wessel, Arant, Olson, 2004), and death from heart disease (Paffenbarger, Hyde, Wing, et al 1993; Richardson, Krisk, Lantz and Hayward, 2004) as well as helping prevent and control hypertension (Fagard, 2005). To offer a complete health promotion programme, prevention programmes including both diet and physical activity and medical treatment when necessary should be made available. The high prevalence of binge drinking (14.0%) was unexpected because the teaching profession does not encourage dangerous drinking. The problem of teacher retirees and their spouses is grievous because of the problem of neglect by the government. In a situation where this region is engulfed in militancy, kidnapping, assassinations, oil spillage which destroys

aquatic life, lack of potable drinking water, vandalization of crude oil pipes, air and water pollution, no farmlands, gas flaring and a total destruction of the ecosystem, the teacher retirees are bound to suffer the defects physically, mentally, socially and emotionally. The non-payment of their retirement entitlements makes life more boring. However, additional research may be needed to understand the behavioral components of these addictions and how existing interventions can best focus on how these develop among vulnerable groups within the teaching profession.

This study has several limitations. The data was cross-sectional and therefore, cannot provide evidence of temporal association or causality. Potential bias is possible because these data were self reported. Despite these limitations, the results of these studies are important for their implications on the health of this teacher retiree's beneficiary group and the direction that the Teacher Health System may take to succeed in achieving the *Healthy People 2010* objectives. There are important open questions surrounding the behavioural aspects of healthy lifestyles. There is not yet enough information available about the relative importance of family background, individual awareness and group socialization processes that may lead to unhealthy behaviours. How individuals view their health, the risk to their health caused by unhealthy behaviours and the likelihood of success under prevention programmes are important but yet poorly understood components of success toward *Healthy People 2010*. These analyses indicate that subsets of this population who may be at increased risk of not meeting the objectives and therefore, might benefit from interventions. This study is also important for improved clinical practices.

Implications for Health Promotion Practitioners

This study indicates that this population of teacher retirees and their spouses between 38 and 64 years of age had not yet met any of the *Healthy People 2010* targets for healthy weight, fruit, vegetable or grain-product consumption; moderate physical activity, vigorous physical activity; obesity; physical inactivity; and binge drinking. Socio-demographic characteristics associated with failure to meet the *Healthy People 2010* objectives include being male, not having a university degree and less-than-excellent self reported general health status. If this assertion holds true, practitioners may be able to target individuals on the basis of socio-demographic characteristics associated with increased health-risk behaviours or poor health-promotion behaviours. Researchers may also be able to use these cross-sectional findings for hypothesis generation and future research into characteristics associated with health-risk behaviours and poor health promoting behaviours.

References

- Clinical Guidelines on the Identification, evaluation and treatment of overweight and obesity in adults: The evidence report (1998), Rockville, Md: National institutes of health, national heart, lung and blood institute.
- Fagard, F. H. (2005). Physical activity, physical fitness and the incidence of hypertension. *J. Hypertension* 23:265 – 267.
- Field, A. E., Coakley, E. H, Must (2001). Impact of overweight on the risk of developing common chronic diseases during a 10- year period. *Arch. Intern. Med* 161:1581 – 1586.
- Healthy People 2010: *Understanding and Improving Health* (2010). 2nd edition. Washington DC., US Department of health and human services.
- He, Ke, Hu, F. B, Colditz, G. A. (2004).Changes in the intake of fruits and vegetables in relation to risk of obesity and weight gain among middle-aged women. *Int. J. Obese Relat Metab Discord* 28:1569 – 1574.
- Kriska, A. M., Saremi, A., Hanson, R. L (2003). Physical activity, obesity and incidence of type 2 diabetes in a high risk population. *Am J. Epidemiol.* 158:669 – 675.
- Kress, A. M., Harzell, M. C., Peterson, M. R. (2006). Status of US military retirees and their spouses toward achieving healthy people 2010 objectives. *American journal of health promotion*, Vol. 20(5).
- Must, A., Spadano, J., Coakley, E. H. (1999). The Disease burden associated with overweight and obesity. *JAMA* 282: 1523 – 1529.
- Paffenbarger, R. S. Jr., Hyde, R. T., Wing, A. L. (1993). The Association of changes in Physical activity level and other life-style characteristics with mortality among men. *N. Engl. J. Med* 328:538 – 545.
- Pi Sunyer, F. X. (1993). Medical hazards of obesity. *Ann Intern, Med.* 119:655 – 660.
- Richardson, C. R., Kriska, A. M., Lantz, P. M., Hayward, R. A. (2004). Physical activity and mortality across cardiovascular disease risk groups. *Med Sci Sports Exer* 36: 1923 – 1929.

US Department of Health and Human Services., Healthy People (2010). Understanding and improving health. 2nd ed. Washington D. C.

Wessel, T. R., Arant, C. B. Olson, M.B (2004). Relationship of physical fitness vs body mass index with coronary artery disease and cardiovascular events in women. *JAMA* 292:1179 – 1187.