

DEMOGRAPHIC PATTERN OF PHYSICAL ACTIVITY BEHAVIOURS AMONG IN-SCHOOL ADOLESCENTS IN JIGAWA STATE, NIGERIA

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Abstract

The demographic pattern of Physical activity behaviours among in-school adolescents in Jigawa State was investigated, the study utilized descriptive survey design. The population of the study consisted of 159,586 in-school adolescents in Jigawa state secondary Schools. A sample of 3,192 students representing 2 per cent of the population participated in the study and 2886 copies of the returned ISAHRBQ were used for analysis. A Multi-stage sampling procedure was adopted to draw the sample from the population. Three instruments were used for data collection. These were a 55-item In-School Adolescent Health Risk Behaviours Questionnaire referred to as ISAHRBQ which was adapted from the 2013- National Youth Risk Behaviour Survey Questionnaire–YRBSQ-2013. Spearman Brown Prophecy Formula was employed to establish the reliability index of the ISAHRBQ. The reliability coefficients of 0.80 for ISAHRBQ was determined through Spearman Brown Prophecy statistic. Research questions were answered using mean and standard deviations. The null hypotheses were tested using t-test statistics and Analysis of Variance (ANOVA) at .05 level of significance. The Findings of the study revealed that there were significant differences ($p > 0.05$) in the mean score rating of in- school adolescents regarding physical activity behaviours according to age. There were significant differences ($p > 0.05$) in the mean scores of in- school adolescents regarding physical activity behaviours according to gender. Based on the findings of this study it was recommended that government should provide adequate sports facilities and equipment in schools.

Keywords: Demographic, Pattern, Physical Activity, Behaviours, Adolescents.

Introduction

Physical exercises have some obvious health benefits. This is why participation in physic: exercises has been prioritized among the three leading healthy lifestyle practices (Okafor, 2009). But according to Terzian and Moore (2009) recent data show that the transition to adolescence is associated with a dramatic decline in moderate to vigorous physical activity and that physical activity continue to decline between the ages of 14 to 18. Physical inactivity during adolescence is a great health concern, because teens are likely to maintain similar levels of physical activity into adulthood and because physical inactivity is associated with a host of negative health outcomes, including cardiovascular disease and obesity. Behaviour is characterized as sedentary if teenage children had not exercised vigorously for at least 20 minutes on any day in the past week, and nonparticipation in sports was characterized as having no involvement at all in team and individual sports or in sports lessons in the past year (Terzian & Moore, 2009).

Regular physical activity has been known to have tremendous benefits to the body. One of the benefits is that it improves mental and physical health. Unfortunately, people including adolescents neglect physical exercise, and this behaviour leads to physical inactivity which has been linked to many health problems such as cardiovascular diseases, stress, overweight and obesity among others (Phillip, 2010). Strong evidence shows that physical inactivity increases the risk of many adverse health conditions, including major non-communicable diseases such as coronary heart disease, type 2 diabetes, and breast and colon cancers, and shortens life expectancy (Lee, Shiroma, Lobelo, Puska, Blair & Katzmarzyk, 2012). National Institute of Health -NIH (2004) asserts that physically inactive

youths with low levels of cardiovascular fitness, high percentage of body fat, and large amounts of visceral adipose tissue have unfavourable cardiovascular risk profiles which increase their risks of developing cardiovascular diseases later in life. Although physical activity can help prevent excessive weight gain, more than a third of all middle and high school students do not get the recommended 30 minutes of moderate physical activity on most days of the week (NIH, 2004). Regular exercise and participation in sports or physical education classes can have positive effects such as building and maintaining strong muscles and bones, controlling weight, and providing positive psychological benefits. In this study, physical inactivity refers to lack of participation in physical activities by in-school adolescents, or participating in physical activity that does not bring any health benefits to the health and fitness levels of adolescents. Therefore, the researcher intends to identify in-school adolescents who are physically inactive in this study so as to target and direct preventive strategies against the incidence.

To fully understand the trends of physical activity behaviour demographic pattern should be well studied. This is because the age for starting a particular behaviour may differ among adolescents. De Visser, Rissel, Smith, and Richter, (2006) who conducted a survey on socio-demographic correlates of selected health risk behaviours among Australian youth asserted that demographic pattern of health risk behaviours is common among adolescents aged 16 to 24. Blum et al (2000), WHO, (2003), Resnick et al (2004), and Springer et al (2006) had the same view in their respective studies conducted in various locations. Studies by Sychareum, Thomsen and Faxelid (2011) revealed that percentages for risky behaviours are higher in the older group for both boys and girls than the younger group. Although age groups have been implicated, and linked to some various risk behaviours, these variations may also involve gender.

Gender disparities are also linked to various risk behaviours such as physical inactivity. The extent to which adolescents engage in risk-taking behaviours can also be influenced by other factors such as gender. Research frequently highlights that males are more likely to be involved in risk-taking behaviours (Alexander, Somerfield, Ensminger, Kim & Johnson, 1992).

Adolescents as defined by WHO (2003) are regarded as the young ones within the age range of 10 – 19 years. According to Kaplan (2004) adolescents are young people between the ages of 10 – 24 years. In this study, adolescents refer to young boys and girls who are currently schooling, and they are within the age range of 10-19 years, transiting from childhood to adulthood. In-school adolescents refers to young boys and girls who are currently schooling, and they are within the age range of 10-19 years, transiting from childhood to adulthood.

Similarly, a South African National Youth Risk Behaviour Survey (2003) found that adolescent's life has drastically changed in the 21st century with an increase in health compromising behaviours such as physical inactivity. Sychareum, Thomsen, and Faxelid (2011) and Terzian, Kristine, Andrews and Moore (2011) revealed that such risky behaviours might cause a threat to adolescents health later in life. Mungrulker, Whiteman, and Posner (2001) asserted that by the year 2010 there will be more adolescents (ages 10-19) alive in the world than ever before, who will constitute about 20 per cent of the world's population with about 85 per cent of them in developing countries (Morhason-Bello, Oladokun, Enakpene, Fabamwo, Obisesan, & Ojengbede, 2008) and about 30 per cent of the total population in Nigeria (Muyibi, et al, 2010). Therefore, considering the above proportions of adolescents in the world, and in developing countries including Nigeria, attention should be given to this population group in order to protect them from the health challenges of physical inactivity.

Due to lack of documented data on adolescents' physical activity behaviour in Jigawa State, this study specifically sought answer to the following questions:

1. What are the physical activity behaviours among in-school adolescents in Jigawa State according to age?
2. What are the physical activity behaviours among in-school adolescents in Jigawa State according to gender?

The following hypotheses were postulated and tested at .05 level of significance

1. There is no significant difference in the mean response scores regarding physical activity behaviour of in-school adolescents in Jigawa State according to age.

- There is no significant difference in the mean response scores regarding physical activity behaviours of in-school adolescents in Jigawa State according to gender.

Methods

In order to achieve the purpose of the present study, a descriptive survey research design was adopted. According to Ali (1996) this design describes conditions or situations of what is being investigated as they exist in their natural settings. The population for the study consisted of all the in-school adolescents in government owned secondary schools in Jigawa State, which numbered 159,586 in 483 secondary schools. The sample for the study consisted of 3192 students drawn by using a multistage sampling procedure. This involved a proportionate stratified sampling technique.

In-School Adolescent Health Risk Behaviour Questionnaire structured by the researchers referred to as ISAHRBQ was used for data collection in the study. The ISAHRBQ questionnaire was adapted from the 2013 National Youth Risk Behaviour Survey Questionnaire (YRBSQ-2013). Therefore, some items of 2013 National YRBSQ were selected and modified, while other items in the questionnaire were not included for some obvious reasons. First, some of these items were considered not relevant to the variables of the study. Secondly, some were not relevant to the Nigerian background. Face validity of the instrument was established by five experts. The observations and comments of the experts were used for the production of the final copy of the questionnaire. Spearman Brown Prophecy Formula was used to determine the reliability of ISAHRBQ. Based on this, reliability coefficient of 0.80 for ISAHRBQ was obtained and it was considered high enough to be used for the study.

The researcher and his research assistants administered 3192 copies of ISAHRBQ to the subjects. A total of 3002 copies of the questionnaire were collected back from the respondents which was 94.04 per cent return rate.

The data were analyzed on an item-by-item basis. Four- point response options of 'Always', 'Sometimes', 'Rarely', and 'Never' which were weighted 4, 3, 2 and 1 respectively. Mean scores were used to answer the two research questions and real limit of numbers were applied to interpret the item by item as well as the cluster mean scores. Therefore, mean scores ranging between 1.00 – 1.99 were interpreted as 'Never', 2.00 – 2.49 were interpreted as 'Rarely', mean scores between 2.50 – 3.49 were interpreted as 'Sometimes' while 3.50 – 4.00 were interpreted as 'Always'. ANOVA statistic was used to test hypothesis one and t-test was used to test hypothesis two. The results of the analyses were presented in the relevant tables. All the hypotheses postulated for the study were tested and decisions on the hypotheses were taken at .05 level of significance.

Results

Table 1: Mean Scores Rating of Physical Activity Behaviour among In-school Adolescents According to Age (n=2886)

Age														
Items	12 yrs & below (n= 337)		13 yrs (n= 558)		14 yrs (n= 428)		15 yrs (n= 605)		16 yrs (n= 248)		17 yrs (n= 367)		18 yrs (n= 343)	
	\bar{X}	Dec	\bar{X}	Dec	\bar{X}	Dec	\bar{X}	Dec	\bar{X}	Dec	\bar{X}	Dec	\bar{X}	Dec
24. physically active over 30 minutes per week	2.29	RL	2.50	ST	2.35	RL	2.15	RL	2.10	RL	1.88	NE	2.06	RL
25. Exercise to strengthen muscles	2.10	RL	2.19	RL	2.10	RL	1.92	NE	1.98	NE	1.76	NE	1.83	NE
26. watching TV	2.09	RL	2.16	RL	2.06	RL	1.91	NE	2.00	RL	1.74	NE	1.78	NE
27. Play Video/ Computer games	1.71	NE	1.81	NE	1.68	NE	1.51	NE	1.44	NE	1.30	NE	1.33	NE
28. Attending PE classes	2.09	RL	2.15	RL	2.04	RL	1.89	NE	1.97	NE	1.71	NE	1.72	NE
29. Sports teams you play	1.59	NE	1.71	NE	1.57	NE	1.47	NE	1.41	NE	1.28	NE	1.30	NE
Cluster mean	1.98	NE	2.09	RL	1.97	NE	1.81	NE	1.82	NE	1.61	NE	1.67	NE

Keys :- Always (AL) = 3.50 – 4.00 Sometimes (ST) = 2.50 – 3.49 Rarely (RL) = 2.00 – 2.49
Never (NE) = 1.00 – 1.99

Table 1 shows the cluster mean scores regarding physical activity behaviour according to age (13yrs - \bar{X} = 2.09 > 12yrs- \bar{X} = 1.98 > 14yrs- \bar{X} = 1.97 > 16yrs- \bar{X} = 1.82 > 15yrs - \bar{X} = 1.81 > 18yrs- \bar{X} = 1.67 > 17yrs - \bar{X} = 1.61) of in – school adolescents which fall between the mean of 2.00 – 2.49 for those aged 13yrs and 1.00 – 1.99 for those aged 12,14,15,16,17 and-18 years respectively. This implies that in- school adolescents aged 13 years rarely participated in physical activities, while those aged 12,14,15,16,17 and-18 years never participated in physical activities. This implies that they were physically inactive.

Table 2

Mean Score Rating of Physical activity behaviours Among in- School Adolescents According to Gender (n= 2886)

Gender	Male (n= 1468)		Female (n= 1418)	
Items	\bar{X}	Dec	\bar{X}	Dec
Physical Activity Behaviours				
24. physically active over 30 min. per week	2.56	ST	1.86	NE
25. Exercise to strengthen muscles	2.33	RL	1.65	NE
26. watching TV	2.30	RL	1.63	NE
27. Play Video/Computer games	1.68	NE	1.44	NE
28. Attending PE classes	2.27	RL	1.63	NE
29. Sports teams you play	1.61	NE	1.38	NE
Cluster mean	2.12	RL	1.59	NE

Keys :- Always (AL) = 3.50 – 4.00 Sometimes (ST) = 2.50 – 3.49 Rarely (RL) = 2.00 – 2.49 Never (NE) = 1.00 – 1.99

Regarding physical activity related behaviours, Table 2 shows that the cluster mean scores of male and female (Male = \bar{X} = 2.12 > Female = \bar{X} = 1.59) in – school adolescents fall between 2.00 – 2.49 for male and 1.00 – 1.99 for female. This imply that male in – school adolescents participated in physical activities rarely, while the female counterparts never participated in physical activities.

Table 3

One – way Analysis of Variance (ANOVA) Testing the Null Hypothesis of no Significant Difference in the Physical Activity Related Behaviours Among in- school Adolescents According to Age (n= 2886)

Variables	Sources of Variance	Sum of Squares	Df	Mean Squares	F	P-value
Age	Between Group	2714.139	6	452.356	14.082	.000*
Physical Activity Related Behaviours	Within Group	92483.045	2879	32.123		

*Significant

Data in Table 3 show that F- values and their corresponding P-values for: physical activity behaviours (F= 14.08, P= .000) are significant since the P- values are less than .05 level of significance at 2879 degree of freedom. The null hypothesis of no significant difference in the exhibition of physical activity related behaviours among in- school adolescents according to age was rejected. This implies that physical activity related behaviours of in- school adolescents differed according to their Age.

Table 4
Summary of t- Test Analysis Testing the Null Hypothesis of no Significant Difference in the Responses Regarding Physical Activity Related Behaviours Among In- school Adolescents According to Gender (n= 2886)

Variable	N	\bar{X}	SD	t- cal	Df	P- value
Physical Act. Beh.						
Male	1468	12.75	5.211	15.401	2884	.000*
Female	1418	9.58	5.828			

***Significant**

****Not Significant**

Data in Table 4 show the t- cal value and the corresponding P- value for physical activity behaviours (t-cal = 15.40, P=.000). The P-value is less than .05 level of significance, we therefore, reject the null hypothesis of no significance difference in the Physical Activity related behaviours of in- school adolescents according to gender. This implies that Physical Activity related behaviours of male and female in- school adolescents regarding these behaviours are different.

Discussion

Table 1 revealed that in –school adolescents aged 13 years rarely participated in physical activities, while others (aged 12, 14,15,16,17 &18 years) never participated in physical activities. This finding was not expected and it is surprising, because, Healthy People (2010) show that adolescents are endowed with tremendous physical energy, which should be expended through physical activities and proper organization of sports competition in secondary schools. Unfortunately, from researchers experience adolescents in the study area are faced with the problem of inadequate sports facilities and equipment in various schools and physical education teachers are also inadequate. The finding of never participated in physical activities in the present study is consistent with the finding of Bester and Schnell (2004) who reported that many adolescents never participated in sports and exercises, and they increasingly turn in to sedentary lifestyles. This finding is also in agreement with the finding of Racette, Deusinger, Strube, Highstein and Deusinger (2005) who found that participation in vigorous aerobic and strengthening activities declined progressively between the ages of 12 and 21 and that of Terzian and More (2009) who revealed that the transition to adolescence is associated with a dramatic decline in moderate to vigorous physical activity and that physical activity continue to decline between the ages of 14 to 18years.

The Table 2 indicates that male in –school adolescents participated in physical activity rarely, while their female counterparts never participated in physical activities. This finding was not expected and therefore surprising, because Healthy people (2010) indicated that adolescents are endowed with tremendous physical energy, which should be expended through physical activities, through the participation in physical education classes and proper organization of sports competition in secondary schools. Unfortunately, from researcher’s experience adolescents in the study area are faced with the problem of inadequate sports facilities and equipment in various schools as well as inadequate and committed number of physical education teachers is also inadequate. The finding of never participated in physical activities in the present study is consistent with the finding of Al-Hazaa1, Abahussain, Al-Sobayel, Qahwaji and Musaiger (2011) who found that a high proportion of Saudi adolescent males and females were not physically active.

Findings in Table 3 indicated a significant difference in physical activity behaviours (F-cal 14.082, P=000) of in- school adolescents according to age. These results were expected and not surprising, because adolescents’ behaviours change with age due to their developmental characteristics and life challenges. These findings are corroborated by the findings of South African National Youth Risk Behaviour Survey - (SANYRBS, 2003) who found that there was statistically significant difference in all the six HRBs including physical activity behaviours according to age groups.

Findings in Table 4 indicated that a significant gender difference was found in physical activity behaviours of in- school adolescents. This finding was expected and not surprising, because

naturally adolescents differ in their developmental characteristics as well as in behaviours, and males are known to be more masculine and risk takers than females. This is corroborated by the findings of South African National Youth Risk Behaviour Survey - (SANYRBS, 2003) who found that there was statistically significant difference in HRBs including physical activity behaviours according to gender.

Conclusion

Based on the findings and the discussion of the study it was concluded that in – school adolescents of various ages (12, 14, 15, 16, 17 & 18) were physically inactive and never exhibited physical activity behaviours, while 13yrs exhibited physical activity behaviours rarely. Male and female in – school adolescents never exhibited physical activity behaviours, but females were more physically inactive than their males counterparts. There were significant differences in the mean scores of in- school adolescents regarding physical activity behaviours according to age and gender.

Recommendations

On the basis of the findings of the present study, the discussions, and conclusions thereof, the following recommendations were made: The study recommended to the Jigawa State Ministry of Education in collaboration with State Universal Education Board (SUBEB) should provide adequate physical education teachers and enough sporting equipment and facilities in all schools. Furthermore, the Ministry of Education under the auspices of Agency for Mass Education should educate parents on the importance of physical exercises to health and longevity of the children, through various for a.

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