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## PUBLIC HEALTH & PRIMARY CARE | RESEARCH ARTICLE

# Understanding physical activity among young Ghanaians aged 15–34 years

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**Abstract:** The present study employs quantitative and qualitative approaches to investigate physical activity among young Ghanaians. Using the 2008 Demographic and Health Survey data, Ghanaian youths were found to be physically inactive. We also found that physical activity was associated with marital status and region of residence among males whilst religion, marital status, place of residence and region of residence were found to be significantly associated with physical activity among females. Results of the qualitative analysis showed that for the youth, therapeutic reasons and physical attractiveness were the reasons to engage in physical activity. Reasons such as maintaining chastity, safety, ill health, type of upbringing, laziness were some barriers identified by the youth. The policy implications of the findings in regard to the prevention of obesity and other non-communicable diseases among the youth are discussed.

**Subjects:** Health & Development; Population & Development; Aging; Children and Youth

**Keywords:** Physical activity; mixed methods; obesity; non-communicable diseases; young Ghanaians

### ABOUT THE AUTHOR

Phidelia Theresa Doegah There is a growing incidence of lifestyle diseases, such as obesity, stroke, cardiovascular disease, diabetes and chronic respiratory disease. Though expected to emerge in old age, non-communicable diseases (NCDs) are now being reported among young people in the sub-Saharan African region. Consequently, NCDs have been reported in replacing infectious diseases as major causes of mortality. As a result, my interest is largely in investigating modifiable lifestyles such as dietary behaviour, water intake, physical activity, smoking, alcohol use, and hours of rest among young people since healthy lifestyles developed at early stage of development can prevent the incidence of non-communicable diseases. Examined in this paper is physical activity among young Ghanaians which largely revealed what importance and barriers are attached to physical activity. The importance attached to physical activity can serve as a leverage to promote physical activity among young people.

### PUBLIC INTEREST STATEMENT

Physical inactivity is a major risk factor for non-communicable diseases for instance, coronary heart disease (6%), type 2 diabetes (7%), breast and colon cancers (10%). This study examined physical activity among young Ghanaians utilising both quantitative and qualitative sources of data. From the quantitative analysis, it was found that young people are physically inactive. Results from the focus group discussions showed young people will only engage in physical activity if it is for the benefit of healing and for acquiring desired body sizes. Issues of safety, maintaining chastity, ill-health, type of upbringing and laziness were mentioned by the youth as inhibiting factors to physical activity. Understanding physical activity among young people is essential in policy formulation to increase physical activity in order to reduce the risk of non-communicable diseases among young people.

## 1. Introduction

Physical inactivity is a major risk factor for non-communicable diseases (NCDs) and obesity (WHO: physical activity, 2017). Specifically, Lee et al. (2012) attributed 6% of the coronary heart disease burden, 7% of type 2 diabetes, 10% of breast and colon cancers to physical inactivity. Similarly, Valery et al. (2012), Di Millia, Vandelanotte, and Duncan (2013), and Rivas-Marino et al. (2015) observed physical inactivity among overweight or obese individuals. In high income countries, NCDs are major determinants of mortality (WHO: noncommunicable diseases country profile, 2014b). Similarly, in 2015 about 48% of deaths in both low and middle income countries were attributed to NCDs among individuals less than 70 years (WHO: physical activity, 2017). NCDs are on the increase in Ghana (Bosu, 2007) and in 2012, about 88,200 deaths had been reported in relation to stroke, hypertension and type 2 diabetes (WHO: noncommunicable diseases country profile, 2014a) which together accounted for about 42% of all deaths in the country.

Steyn and Damasceno (2006) have observed that the growing incidence of lifestyle diseases in sub-Saharan Africa (SSA) is due to the replacement of traditional practices such as walking long distances and habitual physical labour by motorized transport and sedentary activities, especially, in urban settings. For example, hypertension prevalence of 22%, 11–23% and 34–31% are reported among youths 18–34 years in South Africa, Tanzania and Uganda, respectively (Kavishe et al., 2015; Steyn et al., 2000). This observation in regard to the growing incidence of lifestyle diseases in SSA puts the spotlight on the need to understand the role socio-cultural context plays in lifestyles, such as physical activity.

Many studies have shown that such socio-demographic factors as age (Biernat & Tomaszewski, 2015; Pengpid et al., 2015; Seabra, Mendonça, Thomis, Malina, & Maia, 2011; Wallmann-Sperlich & Froboese, 2014), educational level (Almajwal, 2015; Oyeyemi, Oyeyemi, Jidda, & Babagana, 2013; Teh et al., 2014; Vaidya & Krettek, 2014), religion (Akarolo-Anthony and Adebamowo 2014; Adegoke & Oyeyemi, 2011), ethnicity (Adegoke & Oyeyemi, 2011; Teh et al., 2014; Vaidya & Krettek, 2014; Win et al., 2015), marital status (Biernat & Tomaszewski, 2015; Rivas-Marino et al., 2015), place of residence (Najdi et al., 2011; Teh et al., 2014; Wallmann-Sperlich & Froboese, 2014) and region of residence (Mesters, Wahl, & Keulen, 2014), affect people's physical activity behaviour.

As the review has clearly shown, there is an acute shortage of studies in Ghana on the socio-demographic conditions associated with physical activity specifically on the youth. It is against this backdrop of scarcity of studies on the physical activity of youth in Ghana that the present study is undertaken. Specifically, the study aims to employ both quantitative and qualitative data to examine physical activity amongst youth in Ghana.

## 2. Materials and methods

Data for the study came from the 2008 Ghana Demographic and Health Survey (GDHS) and eight focus group discussions (FGDs). The GDHS (Ghana Statistical Service (GSS), Ghana Health Service (GHS), ICF Macro, 2009) was implemented in a representative probability sample of more than 12,000 households selected nationwide stratified by region and residence employing a two stage sampling design. Sample points or clusters were selected at the initial stage from an updated master sampling frame constructed from the 2000 Ghana Population and Housing Census, which resulted in a total selection of 412 clusters. The clusters were selected using systematic sampling with probability proportional to size.

At the second stage, the selection entailed the systematic sampling of 30 of the households listed in each cluster. A household listing was carried out in each selected cluster. The households selected for the women's sample was also eligible for selecting the male sample. A total of 5,096 women and 4,769 men were eligible for individual interviews. Three questionnaires namely household, women and men questionnaires were used in collecting data. The men and women questionnaires were administered to individuals 15–59 and 15–49 years, respectively. These questions were adapted from

standard DHS questionnaires to reflect issues relevant to Ghana. Physical activity is the dependent variable for the quantitative part of the study and it is measured as the number of days of physical activity (“*In the past 7 days, on how many days did you do vigorous physical activity that lasted for at least 15 min each time*”) and it ranged from “0” to “7” days of physical activity.

The second source of data was the FGDs with selected male and female youths which corresponded with the quantitative age component of the study (Doegah & Amoateng, 2018). To collect these data, a purposive sampling technique was used to select participants within the 15–34 age bands and sampling for the FGDs was based on saturation level. The discussions were conducted between September 2015 and January 2016 within two urbanised towns in the Greater Accra and Volta regions of Ghana. Within the Greater Accra region, the James Town (British Accra) and Ussher Town (Dutch Accra) localities were selected for the discussions and Ho was selected in the Volta region.

Available male and female residents of the communities were selected by the research assistants who were residents of the local communities to participate in the discussions. Within each community, the participants were purposively selected across to ensure varied views are obtained. For the FGDs, participants were divided into two age groups 15–24 years and 25–34 years and each age group had two separate groups for males and females and consisted of 6–10 participants giving a total of eight interviews. Questions for the FGDs included,

- (a) *importance young people attach to regular physical activity*
- (b) *activities considered physical activity*
- (c) *how common it is among them*
- (d) *perceived barriers to engaging in physical activities.*

The male and female discussions were conducted accordingly by male and female moderators. The interviews were digitally recorded and notes were taken as well. Interviews were conducted in the Ga, Ewe and English languages.

### **2.1. Data analysis**

Data for the quantitative component of the study was analysed for a total sample of 2,806 and 2,771 of female and male youth, respectively. To ensure representativeness and correct for non-response, the data is weighted taking into consideration the complex survey design, using the “svyset” command in Stata. The analysis was done using the Poisson regression model as the dependent variable was treated as a count response.

For the qualitative data, all interviews were transcribed verbatim and coding done using identified themes from the interview guide and emerging themes from the data. The coding was done using ATLAS Ti.

Ethical approval (N W U—0 0 2 2 4–1 5—A 9) was granted by the North-West University Institutional Research Ethics Regulatory Committee (NWU-IRERC) South Africa. Consent (verbal) of parents for participants less than the age 16 was obtained prior to seeking the consent of participants.

### **3. Results**

Table 1 shows the percentage distribution of respondents’ background characteristics. Females and males aged 15–24 years comprise 55% and 58% of female and male sample, respectively. A higher percentage of both samples have attained secondary education. The majority of the youth in the sample are Christian (79% and 74% of females and males, respectively). A higher proportion of the female and male youth are Akan and the Ga-Dangme group constitute the least proportion.

Table 1 shows that almost half (48%) of the females and 67% of the males are single. Half of the female respondents are urban dwellers, while 52% of the males reside in rural areas. In terms of

**Table 1. Distribution of sample characteristics of respondents**

Variables	Female		Male	
	No.	Percentage (%)	No.	Percentage (%)
<b>Age</b>				
15–24	1553	55.33	1615	58.27
25–34	1253	44.67	1156	41.73
<b>Educational level</b>				
No education	450	15.35	276	9.97
Primary	541	19.30	460	16.62
Secondary	1708	60.86	1806	65.15
Higher	126	4.49	229	8.26
<b>Religion</b>				
Christians	2215	78.95	2062	74.41
Muslims	424	15.13	452	16.29
Traditional/spiritualists	86	3.05	127	4.60
Other	81	2.87	130	4.69
<b>Ethnicity</b>				
Akan	1424	50.76	1320	47.64
Ga/Dangme	206	7.37	166	6.00
Ewe	349	12.45	401	14.48
Mole-Dagbani	428	15.25	456	16.47
Other	397	14.17	427	15.41
<b>Marital status</b>				
Never married	1349	48.07	1875	67.67
Married/living together	1308	46.62	821	29.61
Formerly married	149	5.31	75	2.73
<b>Place of residence</b>				
Urban	1463	52.12	1326	47.87
Rural	1343	47.88	1445	52.13
<b>Region of residence</b>				
Western	237	8.47	251	9.05
Central	225	8.04	227	8.20
Greater Accra	534	19.04	446	16.09
Volta	227	8.11	256	9.25
Eastern	281	10.04	264	9.53
Ashanti	590	21.03	554	20.00
Brong-Ahafo	262	9.35	252	9.09
Northern	249	8.90	292	10.54
Upper East	126	4.50	146	5.26
Upper West	70	2.51	83	3.01
<b>Total</b>	<b>2806</b>	<b>100.00</b>	<b>2771</b>	<b>100.00</b>
<b>Physical activity</b> (ranging from 0 to 7 days)	<b>Median</b>	<b>IQR</b>	<b>Median</b>	<b>IQR</b>
	0	3	3	4

Source: Computed from the GDHS 2008 data file.

region of residence, a higher proportion of females and males reside in the Ashanti and Greater Accra regions; the Upper East and Upper West regions have the least proportions of youths in the sample.

**Table 2. Mean differences between groups**

Variable (Group)	Independent t-test result					
	Males			Females		
	Mean	SD	p-value	Mean	SD	p-value
Age			0.1716			0.1695
15–24	3.075243	0.0609121		1.703065	0.0580579	
25–34	3.209364	0.0783601		1.827445	0.0704253	
Place of residence			0.0030			0.0000
Urban	2.96686	0.075578		1.477307	0.061976	
Rural	3.254927	0.0622198		2.010951	0.0638857	

P-value significant at < 0.05.  
 Source: Computed from GDHS 2008 data file.

**Table 3. One-way ANOVA results of female youth**

Variables	SS	df	MS	F	p-value
Educational level					
Between groups	89.0288449	3	29.6762816	5.31	0.0012
Within groups	15522.2539	2779	5.58555378		
Religion					
Between groups	128.106252	3	42.702084	7.66	0.0000
Within groups	15483.1765	2779	5.5714921		
Ethnicity					
Between groups	468.711175	4	117.177794	21.50	0.0000
Within groups	15142.5716	2778	5.45088971		
Marital status					
Between groups	17.8473049	2	8.92365247	1.59	0.2039
Within groups	15593.4355	2780	5.60914945		
Region					
Between groups	894.988384	9	99.4431538	18.74	0.0000
Within groups	14716.2944	2773	5.30699402		

P-value significant at <0.05.  
 Source: Computed from GDHS 2008 data file.

The estimated median for females is 0 and that for males is 3. Meaning for females about half are physically inactive in a week whilst the other half are physically active for some days in a week. Among male youth the median indicates half of them are physically inactive for less than 3 days while the other half are active for more than three days. To determine variations in the data, the interquartile range (IQR) was used. IQR for females and males is 3 and 4 days, respectively. This means the number of physically active days were around 3 or 4 days in a week for males and females accordingly.

Tables 2–6 show the results of the independent t-test, one-way ANOVA and Tukey post-hoc test for females and males, respectively. Table 2 shows results for the t-test analysis for females and males, i.e. the table shows statistically significant differences in the means for place of residence ( $p = 0.000$  and  $p = 0.0030$ , respectively). Results for the ANOVA for both females and males are shown in Tables 3 and 4. The tables show statistically significant differences between the groups for education, religion, ethnicity and region of residence.

**Table 4. One-way ANOVA results of male youth**

Variables	SS	df	MS	F	p-value
Educational level					
Between groups	157.978014	3	52.659338	8.22	0.0000
Within groups	17786.1439	2776	6.40711237		
Religion					
Between groups	74.1821525	3	24.7273842	3.84	0.0093
Within groups	17869.9398	2776	6.4372982		
Ethnicity					
Between groups	628.374674	4	157.093668	25.18	0.0715
Within groups	17315.7473	2775	6.44942914	0.0715	
Marital status					
Between groups	34.0572123	2	17.0286061	2.64	0.0715
Within groups	17910.0647	2777	6.44942914	0.0715	
Religion					
Between groups	798.227067	9	88.6918964	14.33	0.0000
Within groups	17145.8949	2770	6.18985375		

P-value significant at <0.05.

Source: Computed from GDHS 2008 data file.

**Table 5. Pairwise results of socio-demographic characteristics**

**Tukey Post-Hoc test results of females**

Physical activity	Contrast (mean)	Standard error	p-value
Educational level			
Secondary vs. no education	-0.5219087	0.1234041	<0.05
Religion			
Traditional/spiritualists vs. Christians	0.7523617	0.2352915	<0.05
Other vs. Christians	0.7769231	0.2633765	<0.05
Ethnicity			
Mole-Dagbani vs. Akan	1.06947	0.1222135	<0.05
Mole-Dagbani vs. Ga-Dangme	0.911565	0.2067313	<0.05
Mole-Dagbani vs. Ewe	1.161758	0.1640234	<0.05
Other vs. Mole-Dagbani	-1.113463	0.1506115	<0.05
Region of residence			
Central vs. Western	-0.8311205	0.2379237	<0.05
Greater Accra vs. Western	-0.6566558	0.1947543	<0.05
Volta vs. Western	-0.8546192	0.2243095	<0.05
Ashanti vs. Western	-0.6310757	0.1917245	<0.05
Brong-Ahafo vs. Western	-0.752388	0.2186944	<0.05
Upper West vs. Western	1.450783	0.2336747	<0.05
Eastern vs. Central	0.8882883	0.2291365	<0.05
Upper East vs. Central	2.2381904	0.2485627	<0.05
Eastern vs. Greater Accra	0.7138237	0.183916	<0.05
Upper East vs. Greater Accra	2.107439	0.2076174	<0.05
Eastern vs. Volta	0.9117871	0.2149666	<0.05
Northern vs. Volta	0.7212477	0.215846	<0.05
Upper East vs. Volta	2.305402	0.2355642	<0.05
Ashanti vs. Eastern	-0.6882435	0.1807046	<0.05
Brong-Ahafo vs. Eastern	-0.8095558	0.2091007	<0.05
Upper East vs. Eastern	1.393615	0.2247215	<0.05
Upper East vs. Ashanti	2.081859	0.204778	<0.05
Upper East vs. Brong-Ahafo	2.203171	0.2302237	<0.05
Upper East vs. Northern	1.584155	0.2255629	<0.05
Upper West vs. Upper East	-1.706093	0.2282622	<0.05

Only significant pairings are shown in the table.

Source: Computed from GDHS 2008 data file.

**Table 6. Pairwise results of socio-demographic characteristics**

**Tukey Post-Hoc test results of males**

Physical activity	Contrast (mean)	Standard error	p-value
Educational level			
Primary vs. no education	-0.507252	0.1776333	<0.005
Secondary vs. no education	-0.7800301	0.1504399	<0.005
Higher vs. no education	-0.6965682	0.2224629	<0.005
Religion			
Muslims vs. Christians	0.499621	0.1250855	<0.005
Ethnicity			
Mole-Dagbani vs. Akan	1.178243	0.1219898	<0.005
Mole-Dagbani vs. Ga-Dangme	0.9287572	0.2256409	<0.005
Mole-Dagbani vs. Ewe	1.375999	0.159473	<0.005
Other vs. Mole-Dagbani	-1.083381	0.1525033	<0.005
Region			
Volta vs. Western	-0.7467532	0.2278254	<0.005
Ashanti vs. Western	-0.6952658	0.2038429	<0.005
Upper East vs. Western	0.8669908	0.2386261	<0.005
Upper West vs. Western	0.9017616	0.2188756	<0.005
Upper East vs. Central	1.228687	0.2566071	<0.005
Upper West vs. Central	1.263457	0.2383512	<0.005
Upper East vs. Greater Accra	1.1767558	0.2167094	<0.005
Upper West vs. Greater Accra	1.211529	0.1947487	<0.005
Brong-Ahafo vs. Volta	0.8390558	0.2273127	<0.005
Northern vs. Volta	0.9683544	0.2111695	<0.005
Upper East vs. Volta	1.613744	0.2334116	<0.005
Upper West vs. Volta	1.648515	0.2131786	<0.005
Upper East vs. Eastern	1.031713	0.2329975	<0.005
Upper West vs. Eastern	1.066484	0.2127251	<0.005
Brong-Ahafo vs. Ashanti	0.7875684	0.2032698	<0.005
Northern vs. Ashanti	0.916867	0.1850407	<0.005
Upper East vs. Ashanti	1.562257	0.2100679	<0.005
Upper West vs. Ashanti	1.597027	0.1873303	<0.005
Upper East vs. Brong-Ahafo	0.7746883	0.2381367	<0.005
Upper West vs. Brong-Ahafo	0.8094591	0.218342	<0.005
Upper West vs. Northern	0.6801604	0.2014812	<0.005

Only significant pairings are shown in the table.  
 Source: Computed from GDHS 2008 data file.

Because the one-way ANOVA test showed that the means were not all equal for educational groups, religion, ethnicity and region of residence for females, the Tukey post-hoc test was performed to determine which means were significantly different with the results shown in Table 5. Female youth with secondary education reported more days of physical activity than those with no education ( $p = 0.000$ ). With regards to religion, females who are Traditional/Spiritualist ( $p = 0.008$ ), “Other” ( $p = 0.017$ ) religions report more physical activity days compared to Christian females.

Females belonging to the Mole-Dagbani group compared to the Ga-Dangme group report more days of physical activity ( $p = 0.000$ ). Moreover, more days of physical activity are reported among Mole-Dagbani females as against those in the Ewe group ( $p = 0.000$ ), while females who belong to the “Other” ethnic group report more days of physical activity than their Mole-Dagbani counterparts ( $p = 0.000$ ). More days of physical activity are associated with females in the Central ( $p = 0.017$ ), Greater Accra ( $p = 0.026$ ), Volta ( $p = 0.006$ ), Ashanti ( $p = 0.034$ ) regions compared to those in the Western region.

The post-hoc test (see Table 6) shows that those with primary ( $p = 0.022$ ), secondary ( $p = 0.000$ ), higher ( $p = 0.010$ ) education have significantly more days of physical activity than those without education. Compared to Christian males, Muslim males reported more physical activity days ( $p = 0.000$ ).

Mole-Dagbani males engage in more physical activity than Akan males ( $p = 0.000$ ); males who belong to the Mole-Dagbani group report more days of physical activity than Ga-Dangme males ( $p = 0.000$ ) and Ewe males ( $p = 0.000$ ). Also, more days of physical activity are associated with males belonging to the “Other” ethnic group than the Mole-Dagbani group ( $p = 0.000$ ).

With regards to region of residence, males in the Volta ( $p = 0.035$ ), Ashanti ( $p = 0.023$ ), Upper East ( $p = 0.011$ ), Upper West ( $p = 0.002$ ) regions engage in more physical activity than males in the Western region.

Table 7 shows the results for the Poisson regression analysis. The results show that among males, marital status and region of residence are statistically associated with physical activity, whilst for females the significant variables are religion, marital status, place and region of residence. Females, who belong to “Other” religion compared to Christian females, are expected to have 39% more physical activity days.

Young males who were formerly married compared to the never married, would be expected to have 23% less number of physical activity days. Moreover, formerly married females are expected to have 26% more number of physical activity days than their never married counterparts. Females resident in urban areas would be expected to have 26% less number of physical activity days compared to their counterparts in rural areas.

Table 7 shows that males who live in the Greater Accra, Upper East and Upper West regions are expected to have 31% and 25% more number of physical activity days, respectively. On the other hand, females in the Central region compared to females in the Greater Accra region would be expected to have 35% less number of physical activity days, whilst females in Eastern and Upper East regions compared to Greater Accra females are expected to have 33% and 66% more number of physical activity days accordingly.

As the quantitative analysis has clearly shown, on the whole physical activity is unpopular amongst the youth in Ghana. To understand the reasons for this state of affairs, we turn to the qualitative analysis for some answers. This set of data help to understand the importance young Ghanaians attach to physical activity, the activities they engage in, how common it is among them and perceived barriers, based on the health belief model (HBM).

### **3.1. The therapeutic effect of physical activity**

The qualitative data showed that the youth know the health benefits of physical activity and engage in it for its health benefits generally in reducing risk to sicknesses. This means some individuals know health benefits in relation to physical activity and this knowledge is compelling them into being physically active as illustrated in the following statement:

*“Also they think doing these physical activities jogging, running makes them fit and not be always sick and those stuffs.”* (Female, 15–24 years, English).

*“It has health benefits such as losing weight and also helps the boosting the immune system. It also makes you active and energetic.”* (Male, 25–34 years, English).

#### **3.1.1. Physical appearance and weight management**

The fundamental motivation for the engagement in physical activity by female youth especially appears to be for the physical appearance to be gained through the loss of weight that results from physical activity and thus, the acquisition of the desired body weight and not for health benefits. Thus, essentially the youth see physical activity as something for overweight persons to acquire desired physical appearance. This thinking on the part of the youth is illustrated in the quotes below:

**Table 7. Poisson regression analysis of the association between socio-demographic characteristics and physical activity**

Variable	Male				Female			
	IRR	S.E	95%	CI	IRR	S.E	95%	CI
Age								
15–24(RC)	1.000				1.000			
25–34	1.080	0.051	0.994	1.185	1.107	0.076	0.967	1.268
Level of education								
No education(RC)	1.000				1.000			
Primary	0.946	0.073	0.813	1.102	0.936	0.087	0.780	1.122
Secondary	0.928	0.066	0.807	1.067	0.984	0.087	0.826	1.171
Higher	0.912	0.097	0.740	1.125	1.071	0.190	0.755	1.520
Religion								
Christian(RC)	1.000				1.000			
Muslims	0.983	0.056	0.879	1.099	1.167	0.121	0.952	1.431
Traditional/spiritualist	0.912	0.071	0.783	1.062	1.174	0.145	0.921	1.496
Other	0.989	0.081	0.841	1.163	1.392*	0.178	1.083	1.789
Ethnicity								
Akan	0.972	0.082	0.823	1.147	1.051	0.153	0.790	1.399
Ga-Dangme(RC)	1.000				1.000			
Ewe	0.949	0.088	0.791	1.139	0.923	0.174	0.637	1.338
Mole-Dagbani	1.122	0.117	0.914	1.378	1.229	0.205	0.885	1.706
Other	0.959	0.093	0.792	1.162	0.016	0.168	0.734	1.405
Marital status								
Never married(RC)	1.000				1.000			
Married/living together	0.935	0.051	0.840	1.042	0.881	0.071	0.752	1.034
Formerly married	0.774**	0.101	0.598	1.002	1.256**	0.146	1.000	1.577
Place of residence								
Urban	0.989	0.046	0.903	1.084	0.741*	0.069	0.617	0.891
Rural(RC)	1.000				1.000			
Region of residence								
Western	1.104	0.112	0.903	1.348	1.144	0.230	0.770	1.699
Central	0.967	0.096	0.795	1.176	0.655*	0.111	0.469	0.915
Greater Accra(RC)	1.000				1.000			
Volta	0.897	0.089	0.738	1.090	0.755	0.205	0.443	1.287
Eastern	1.038	0.081	0.890	1.210	1.330**	0.208	0.977	1.810
Ashanti	0.883	0.075	0.747	1.045	0.926	0.133	0.699	1.228
Brong Ahafo	1.078	0.099	0.899	1.293	0.757	0.134	0.535	1.073
Northern	1.029	0.104	0.843	1.256	0.856	0.153	0.603	1.216
Upper East	1.308*	0.132	1.072	1.595	1.658*	0.311	1.146	2.397
Upper West	1.250*	0.123	1.031	1.516	0.905	0.171	0.624	1.314
*<0.05, **<0.10	Hatsq = 0.726				Hatsq = 0.231			

Source: Computed from GDHS 2008 data file.

*“It also helps to burn excess fat in the body.”* (Female, 15–24 years, English).

*“They think that when they go they will reduce their weight.”* (Female, 15–24 years, English).

*“I’ll say they do. My sister like this used to go to the gym because she is fat, so she is trying to reduce her weight. So she use it a lot.”* (Female, 25–34 years, English).

*“Some also take it to be prestigious, to have six packs. When you lift your shirt people see it like ‘macho’ [strong] man and people will appreciate you.”* (Male, 15–24 years, English).

So, fundamentally, as the above theme has clearly illustrated, the youth are physically inactive due to lack of education on the benefits of physical activity and the lack of importance placed on it. This lack of education is borne out by the fact that the youth see weight loss for its aesthetic value but fail to realise that weight loss can help prevent such diseases as diabetes, heart conditions and high blood pressure. This lack of knowledge therefore acts as a major barrier to physical activity amongst the youth.

### 3.1.2. *Busy schedules*

Besides the problem of lack of proper education about the health benefits of physical activity among the youth is another reason why physical activity is unpopular amongst them: conflicting work, study and other activities vis a vis physical activity. This lack of appreciation for a “balanced” life is vividly captured in the quotes below by the youth:

*“Some are lazy and others don’t have or get the time for it.”* (Male, 15–24 years, Ga).

*“Sometimes too it is due to the work you are doing. Sometimes you go to work a nurse like this you go to work in the morning then come back late so waking up early to go for jogging before going back to work again become a problem.”* (Female, 25–34 years, English).

*“People are not physically active sometimes because of their work and schedules.”* (Male, 25–34 years, English).

*“For me, no, because most of my friends are busy with their studies and social media and stuff so they don’t really have time for jogging and exercise. Unless of course it is an excursion or a games programme being organised, they don’t exercise.”* (Female, 25–34 years, English).

*“For some Sundays or Saturdays are for climbing the mountain and just to have fun.”* (Male, 25–34 years, English).

Walking, jogging, rope skipping, playing football, fishing, hawking, boxing and carrying out household chores were activities participants mentioned young people engage in as physical activities. Regarding how common physical activity is among young people, participants in the FGDs indicate physical activities are popular among the youth, though they noted some engage in it unintentionally and others do so probably because of the importance they attach to it.

The awareness of the merits concerning physical activity showed some youth taking up physical activity, whilst others do not because of the lack of knowledge of it. On how common or uncommon physical activity is among the youth, is illustrative in the following comments:

*“It is very common because in our age group our parents do send us a lot. So while you are walking you may think like you are just running an errand, but little do you know that you are helping your body.”* (Female, 15–24 years, English).

*“The people in the community do exercise, like jogging or keeping fit.”* (Female, 25–34 years, Ga).

However, a member of one group expressed otherwise:

*“Once before you see someone dressed that he or she is going to do a physical activity.”*  
(Female, 25–34 years, English).

### **3.2. Perceived barriers to physical activity**

Participants in the focus groups identified barriers perceived in relation to being physically active. This is important since some youth are physically inactive in spite of the values attached to it. Specifically, intrinsic factors (laziness, upbringing and ill health) and extrinsic factors (modern means of transportation, safety, chastity and busy schedules) prevent the youth from daily physical activity.

#### **3.2.1. Laziness**

The youth are lazy about physical activity generally because of their addiction to social media. Thus they fail to take up physical activity even though knowing its benefits. This is because we are not brought up to value physical activity within our immediate surroundings. This is illustrated in the following:

*“Some people are lazy to exercise and complain of not getting any important thing from it.”*  
(Female, 15–24 years, Ga).

*“Exercising is discipline that especially going to the gym, going for jogging especially when you are working or schooling you have to wake up early to the gym or go for a walk ...the time to wake up and go for exercise or even to go after work to the gym I think is discipline.”* (Male, 15–24 years, English).

#### **3.2.2. Upbringing**

The absence of physical education in the school curricula presently which was not the case in the past, has created a barrier to physical activity. This is because, presently, schools engage students into physical activities usually prior to school competitions only and not after. Young people spent much time in school thus as they grow up without such behaviours of physical activity imbibed in them they are not likely to engage in them as illustrated for instance in the following quote:

*“And if you are not used to it, you just can’t get up every morning and say you are going for jogging, but if you’ve done it before then you are used to it even with that your working thing you can still do it and go to work.”* (Female, 25–34 years, English).

#### **3.2.3. Chastity**

A barrier to physical activity is seen in the societal values in relation to chastity. Sex is expected to happen within marriage to prevent promiscuity and for that reason the youth are encouraged to avoid premarital sex. Consequently, the youth strive to prove their virginity at marriage. Because of this, female youth who are virgins are reluctant to engage in physical activity since physical activity is wrongly perceived as a threat to maintaining a girl’s virginity. This is illustrated below:

*“Some ladies they have the perception that when you engage in exercises your hymen will be broken and then if they marry the man ask if they are virgins and they say yes and they go on the bed and after the first sexual intercourse and there is no blood the man will say you are not a virgin meanwhile it was because of the exercises they have done your hymen is broken. So they are with fear that if they go into marriage their husbands may not trust them because they think they are not virgins.”* (Male, 25–34 years, English).

#### **3.2.4. Modern means of transportation**

The availability, physical and financial access to transportation within the society serve as an obstacle to physical activity among the youth as shown in the quote below:

*“I have a friend who always says I wasn’t brought up walking, my daddy always picks me wherever I want to go whenever so even if the car is not available I have money to pick taxis.”*  
(Female, 15–24 years, English).

### 3.2.5. Safety

Due to the emergence of crime as major social problem, individuals who go for walk or jog at dawn or at other odd times entertain the thought of being attacked. This fear of crime acts as a barrier to the youth as illustrated in the following quotes:

*“Because they don’t like exercising alone, with the fear of being attacked on the way.”*  
(Female, 15–24 years, Ga).

*“They [parents/guardians] won’t allow you if you want to, they are just afraid.”* (Male, 15–24 years, English).

### 3.2.6. Ill health

Some people are not physically active not because of choice but due to health issues. Thus the health condition of a youth could prevent him/her from partaking in physical activities as shown in the quote below:

*“Sometimes complicated health issues. May be you are sick and you wish to walk, but because of your health status you either have to go in a cab.”* (Female, 15–24 years, English).

## 4. Discussion

While literature on physical activity among the youth is proliferating, there is a scarcity of studies on the phenomenon among Ghanaian youth aged 15–34 years. The aim of this study was to fill this void in the existing literature by employing both quantitative and qualitative research designs to identify factors and explain some reasons affecting physical activity behaviour. The relevance is to gain better understanding of physical activity as it relates to the Ghanaian context especially among the youth. The results showed that on the whole, Ghanaian youth are physically inactive. Among the myriad reason cited by the youth for being physically inactive included busy work schedules, fear of crime, plain laziness, chastity, illnesses, etc. Because of the labour-intensive nature of most occupations in the society (e.g. farming and fishing), people in general do not necessarily perceive the need to instil a habit of intentional physical activity within the socialisation process.

Upbringing as a barrier to physical activity among young Ghanaians is consistent with findings by Walter and Randt (2011), who identified exercise as not being a part of the African culture among black Isixhosa speaking professional women in South Africa. The present study also found that concern about chastity is a barrier to physical activity among young female Ghanaians. In addition to this concern about chastity, culturally females in sports are perceived to be masculine in appearance.

The finding that many young Ghanaians engage in physical activity not because of its direct health benefits but because of the fact that it gives them the desired body size through weight loss is consistent with findings from Walter and Randt (2011) who found physical inactivity among black Isixhosa speaking professional women to be associated with undesirable weight loss. In fact, alternatives to physical activity are offered in the form of body slimming medicines and surgeries among young Ghanaians. Currently, these are invading the Ghanaian culture through advertisements to reduce weight.

Modern transportation as a barrier to physical activity is corroborated by Steyn and Damasceno (2006) who found that increasing lifestyle diseases are attributed to the replacement of long distance walking, and habitual physical labour by motorized transport and sedentary activities, especially, in urban settings.

We found that females who professed “Other” religious faiths (no religion and other) reported more days of physical activity. Females within the “Other” religion category in the Ghanaian context usually are observed to engage in activities related to household chores, economic

activities and visiting the gyms while others attend their religious gatherings. Thus they are more physically active. However, other studies observed no relationship between religion and physical activity (Akarolo-Anthony and Adebamowo 2014; Adegoke & Oyeyemi, 2011).

Females in urban areas were less likely to engage in physical activity, though urban centres are known for the availability of facilities as well as high awareness of the benefits of physical activity. This could be due to the fact these young, upwardly mobile career women are busy and pre-occupied by social activities and household chores that are less physically involving, urban dwelling females are left with little or no time for physical activity. In any case, this finding is contrary to those of Wallmann-Sperlich and Froboese (2014) and Teh et al. (2014) who did not find any significant differences between urban and rural residents with regards to physical activity.

Region of residence was found to be significantly related to physical activity among both males and females, which is consistent with the findings by Mesters et al. (2014). The relationship between region of residence and frequency of physical activity among males in the Upper East and Upper West regions as well as females in the Eastern and Upper East regions may be a function of their respective locations. These regions compared to the Greater Accra region are rural in nature where physically demanding occupations tend to predominate.

## 5. Conclusion and policy implications

In conclusion, the study has underscored the importance of the bioecological model in helping us to understand the role of such individual characteristics as age and others in social interactions and their individual development. In terms of policy, considering females and males are different not only in terms of their physiology and anatomy, but also in their relative access to societal resources which ultimately affect their interest in participating in physical activity. These personal, environmental, and cultural considerations should be paramount in encouraging physical activity within the Ghanaian context to prevent risk to obesity and NCDs.

## 6. Limitations of the study

There are two main limitations. Firstly, the study's data were based on self-reports by the youth so is subject to possible social desirability bias. Consequently, this can be improved using a standardised questionnaire during a cross-sectional study or in a longitudinal study, the application of a device to measure physical activity. Secondly, caution must be exercised in interpreting the qualitative findings because although more understanding was obtained on physical activity behaviour, results may not be generalised to all Ghanaian youth. This is because qualitative sample size is not for the purpose of generalisation but for in-depth understanding.

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### Disclosure of interest

The authors have no conflicts to declare.

### Data availability statement

The quantitative data for this study is available upon request from Measure DHS and the data that supports the qualitative findings of this study are available from the corresponding author, [PTD], upon reasonable request.

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