INFLUENCE OF PHYSICAL ACTIVITY ON BODY COMPOSITION OF IMPAIRED STUDENTS IN FEDERAL COLLEGE OF EDUCATION (SPECIAL) OYO

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Abstract
The study determined the influence of physical activity on body composition of impaired students in Federal College of Education (Special) Oyo. Ex-post facto research design was adopted for the study. Sample comprised of 129 impaired students in FCEO using purposive sampling technique. A validated adapted questionnaire with .83r was used alongside other standardised and calibrated instruments for data collection. Percentage, mean, standard deviation, *Multiple regression and t-test were used* were used to analyse the data collected. *The study found that there was significant influence of physical activity level on only the waist-hip-ratio of the VI students (R .357, R^2 .127, SEE 0.036, F(1, 65) = 9.473, p .003); HI students were significantly more physically active than the VI students (MD- 630.48, SED -109.42 METs per week, t(127) = 5.660, p .000); there was no significant difference in body composition variables of the participants, (WC, t=0.612, p>0.05; BMI, t=0.263, p>0.05; and WHR, t=1.208, p>0.05). Based on the findings, it was concluded that; impaired students of FCEO are physically active with HI students having higher PAL than VI students; and impaired students were healthy. Therefore, exercise intervention programmes that increases PAL and enhances health promotion should be organised for students with special-needs.*

Key words: ***Physical Activity, Body Composition, Impairment, Impaired Students***

Introduction

The most valuable resource in every country on planet is her people including special people. Neglecting millions of special-needs individuals in Nigeria could result into social exclusion, restrictions, economic unproductiveness and total disability. This may be disastrous to their health and the society especially as their population is on the increase on daily basis due to increase in the level of insurgency, banditry, kidnapping and environmental hazards which had left many victims with body defects.

Physical activity is potent countermeasure against both communicable and non-communicable diseases, and at the same time it plays a major role in the prevention of the most deadly chronic diseases including cardiovascular diseases, obesity, metabolic diseases, cancer, pulmonary diseases, immune dysfunction, musculoskeletal disorders, and neurological disorders (Booth, Laye & Roberts, 2011**).** Participation in sports and physical activity has a positive impact on individual's physical and psychological health, on their coping abilities and on their quality of life (WHO, 2012). Furthermore, taking part in physical leisure activities during childhood could be of great significance for leading a physically active lifestyle in adulthood. Thus, participation in physical activities is important for children and adults, and for non- disabled and disabled persons. Physical activity is important for our physical and psychological health and for our wellbeing and quality of life.

Physical activity has the potential to enhance one's psychophysical state of health. As a matter of fact, it aids in maintaining a healthy body weight, strengthening bones, muscles, and joints, and improving the efficiency of the cardio-respiratory system, all of which helps to reduce the risk of and prevent chronic diseases (Piercy et al., 2018). Physical activity has positive effect on mood, self-esteem, body perception, and formation of social bonds. Moreover, Sahlin and Lexell (2015), discovered that participation in physical activity helps people with impairments maintain their psychophysical health, improve quality of life, life satisfaction, community reintegration, mood, and employment. Physical activity helps to reduce the discrimination related to disability by creating a positive environment for interactions between people with and without impairments to grow; help people with physical impairments become stronger physically and psychologically and gain more independence by emphasizing participants' strengths rather than their limitations (Lape, 2018).

In contrary, inability to carry out daily tasks could contribute to sedentariness and disability in the life of people with special needs. Solish, Perry and Minnes (2010), affirmed that physical inactivity is common among People Living With Disability (PLWD). Their level of participation in activities could be limited due to lack of enthusiasm to seek for ways to improve their level of participation and the restrictions placed by the society which caused them to be stationary at a particular place. **Bouchard, Blair and Katzmarzyk** (2015) opined that physical inactivity and sedentary behaviours have had harmful effects on human health. It is characterised by activities which involved expending little amount of energy below the recommended level (minimum of 150 minutes of moderate exercise or 75 minutes of vigorous exercise) has strong relationship with both communicable and non-communicable diseases (**van der Berg et al., 2016**) like obesity, cancer, arthritis, osteoporosis, severe joint pains, hypertension and cardiac infarction. Spending large amounts of time being sedentary may increase the risk of contracting numerous diseases.

It has been associated with improved physiological functioning and lower disease risk of cardiovascular and metabolic disorders (Blair, La Monte & Nichaman, 2004). Active lifestyles tend to increase cardiac output, reduce heart rate in the long run, increase venous returns, increase energy to the working muscles and remove toxins from the body. It also has beneficial effects on adiposity levels, blood pressure and components of mental health (self-concept, anxiety and depression) (Warbuton, et al., 2010). The consciousness of staying physically active, therefore, places high responsibilities on impaired persons since there is no separate scale for measuring the Physical Activity Level (PAL) and other health parameters of PLWD other than the one used for the general population.

Factors that could contribute to disability include cultural, environmental, socioeconomic and lack of physical activity (Centres); lack of access to affordable healthful foods, and safe locations for physical activity (Adler & Stewart, 2009). Physical inactivity among people with special needs could result into energy imbalance in the body. Energy surplus may exist in the body system which could later leads to overweight and increased body fat (Fox, Witten & Lullo, 2014). The relationship between obesity and disability is bidirectional. Impairment status can affect how obesity is determined due to physiological and anatomical differences of the special needs persons (Fox et al., 2014).

Visual impairment (VI) covers all forms of reduction in vision (WHO, 2012). Vision loss limits visual capability of an individual which may be caused by disease, trauma, congenital or degenerative condition and natural disaster. People living with visual impairment cannot experience the world around them the way people with normal eyesight do. There are over 285 million visually impaired people in the world and the larger percentage of this population live in developing countries (WHO, 2014), in which Nigeria has the population of over 2.5 million of people living with vision impairment (Akano, 2017). Visual impairment in an individual is defined as vision even with correction (glasses or contact glasses), medicine or surgery which adversely impair the ability to complete everyday tasks (WHO, 2012). Visual function in humans is paramount to physical function, cognitive function, social life and overall well-being. Or0gan of sight is needed for survival, optimal performance of Activity of Daily Living (ADLs) and Instrumental Activity of Daily Living (IADLs).

At the other hand, hearing is the ability to perceive sounds. Loss of the ability to hear sound frequencies in the normal range of hearing is referred to as hearing impairment. Hearing impairment is one of the prevalent chronic disorders found in children and adults worldwide (Smith et al., 2011). Hearing impairment is the type of ear dysfunction that could be assessed or detected in the laboratory. Hearing impairment might cause activity limitation if not properly assessed and managed early in life (WHO, 2012). Hearing loss could affects normal day to day activities; impair communication and puts impaired persons at risk of social isolation and psychological problems. Hearing loss could be a causal factor for disability in the hearing world where spoken words remain only means of communication.

Over one billion people globally encounter impairment at some point in their lives as approximately 25% of impaired persons have handicap conditions which significantly impacts their ability to perform daily tasks. (World Health Organization, WHO, 2021). Physical activity helps people with disabilities to have better access to community-

appropriate activities. Due to social barriers and the nature of their disability, people with physical disabilities do not appear to be able to participate in social activities like sports (Aliberti et al., 2022).

To allow equal participation in physical activity, it is a basic necessity to recognize athletes with disabilities as athletes as well (Dominic, 2020). Even though inclusion is essential to how learning is processed, its applicability to people with special needs has been questioned. For people with disabilities, sport can offer a range of mainstream and disability-specific opportunities throughout the inclusion spectrum. Sports activities may not be accessible to 15% of the world's disabled population (Harada, 2011). People with disabilities face additional emotional challenges in the form of equipment, media, coaching, perceptual barriers, accessibility issues, and other obstacles. This is frequently the result of obstacles that keep people from participating, like a lack of equipment that is specifically designed for sports and prejudice based on social and cultural norms. The World Health Organization (2010) has determined that aerobic physical activity, with a minimum of 150 minutes of moderate exercise or 75 minutes of vigorous exercise, has a profound impact on people's health and well-being at all ages, including those with special needs.

Statement of the Problem

Assistive devices are items used to promote mobility, maintain or improve physical, social, mental, emotional and other functional capabilities of impaired persons. Assistive Technology (AT) devices have been reported to be effective in the education sector as they enhance the academic performance of learners (Aladesusi, Bakinde & Ibironke, 2023; Adedapo, Nwosu & Ibitoye, 2009); helps to overcome barriers to learning by providing other alternatives for communication among learners with impairments (Yakubu, 2009). Despite rapid technological development in the 21st century, it is documented that many people with special needs do not have knowledge and access to assistive devices (Cawood & Visagie, 2015) which causes lack of access to information, challenges of transportation and lack of access to both private and public buildings (WHO, 2011).

Federal College of Education (Special) Oyo is a pioneer institution in the area of special education and still the only one in Africa, devoted to the education of middle level teachers for lower secondary and primary schools (Yusuf, Fakomogbon & Issa, 2012). Invariably, the institution accommodates students from different parts of Nigeria and Africa as a whole with provisions made for devices that give support to special-needs persons. The researcher however, observed that Federal College Education (Special) Oyo students do not engage in physical activity at recommended level of 150 minutes of moderate exercise or 75 minutes of vigorous per week. This implies that many of them risk living sedentary life, which might lead to co-morbidity or disability as the case may be.

Methodology

Ex post facto research design was adopted for the study. The population for the study included 381 registered students of Special Visually Impaired and Special Hearing Impaired in Federal College of Education (Special) Oyo. A sample of 129 participants (67 visually impaired students and 62 hearing impaired students) were selected purposively based on the availability and readiness of the students. An adapted and validated Physical Activity Scale for Individual with Physical Disabilities

(PASIPD) with reliability score of .83r was used alongside other standardised and calibrated instruments such as body fat/ hydration monitor scale, height scale and inelastic tape rule. Ethical clearance with the number UERC/ASN/2020/2034 was obtained from University of Ilorin Ethical Review Committee. The services of four (4) trained research assistants were employed for data collection. The researcher provided adequate information necessary to make an autonomous decision and also to ensure that the participants adequately understand the information provided concerning the potential benefits and consequences in the course of data collection which assisted the researcher obtained a signed informed consent indicating the voluntary participation of participants in the study.

Instrumentations

Physical Activity Scale for Individual with Physical Disabilities (PASIPD) was used to rate the PAL of the participants. PASIPD measured physical activity engagement of an individual in the previous 7 days. PASIPD was specifically designed in epidemiologic studies of physical activity, health and function of individuals with physical disabilities. A copy of adapted PASIPD questionnaire that measured the number of days a week and hours daily of participation in recreational, household and occupational activities over the past 7 days was administered to the participants. Total score was calculated as the average hours daily times a metabolic equivalent value and summed over items. Participant's overall energy expenditure was used to classify PAL of the participants into minimally, moderately and Hepa active.

To assess the body composition of the participants, body fat/hydration monitor scale, non-elastic tape rule and height scale were used. Body composition variables (BMI, WC and WHR) was measured according to the guidelines of the International Biological Program (IBP) through Bioelectrical Impedance Analysis (BIA). Descriptive statistics of frequency, percentage, mean and standard deviation was used to describe the demographic characteristics of the participants and to answer the research questions. Inferential statistics of Multiple Regression and t-test were used to test the formulated hypotheses at .05 alpha level.

Results

Socio-Demographic Information

Table 1

Socio-demographic Characteristics of Impaired Students in FCEO

Demographic Variables		Frequency	Percent
Gender			
	Male	88	68.20
	Female	41	31.80
	Total	**129**	**100.00**
Age-Range			
	17 - 20 years	39	30.20
	21 - 25 years	66	51.20
	26 years and above	24	18.60
	Total	**129**	**100.00**
Nature of Impairment			
	Visual	67	51.9
	Hearing	62	48.1
	Total	**129**	**100.0**
Degree of Impairment			
	Low Vision	22	17.1
	Blind	45	34.9
	Hard of Hearing	10	7.8
	Deaf	52	40.3
	Total	**129**	**100.0**

Table 1 shows the descriptive analysis of the socio-demographic characteristics of impaired students in Federal College of Education (Special), Oyo FCEO (n = 129). Majority of them 88 (68.2%) were male and the remaining 41 (31.8%) were female. Their average age was 22.78 ± 3.09 years; those who were within 21- 25 years old were majority 66 (51.2%) and those who were 26 years or older were the fewest 24 (18.6%). Majority of the participants 67 (51.9%) had visual impairment and 62 (48.1%) had hearing impairment. Categorization of the participants based on the degree of impairment shows that majority of the participants 52 (40.3%) were deaf, 45 (34.9%) were blind, 22 (17.1%) had low vision, and 10 (7.8%) were hard of hearing participants.

Research Question one: What is the Physical Activity Level of VI and HI students in FCEO?

Table 2

Descriptive Analysis of Physical Activity Level (PAL) of Impaired Students in FCEO

All Students (n = 129)		Visually Impaired (n = 67)		Hearing Impaired (n = 62)	
Mean	**Std. Deviation**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
2679.57 METs	694.634 METs	2376.55 METs	461.161 METs	3007.03 METs	756.672 METs

Rating of PAL	**METs**	**Frequency**	**Percent**	**Frequency**	**Percent**
Minimally Active	600 – 1500 METs	3	4.5	2	3.2
Moderately Active	1501 – 2999 METs	63	94.0	27	43.5
HEPA Active	≥ 3000 METs	1	1.5	33	53.2
	Total	**67**	**100.0**	**62**	**100.0**

The results show that majority of the participants 90 (69.8%) are moderately active as indicated by the average of Metabolic Equivalent of Tasks (2679.57 METs) obtained. Majority of VI participants were classified as moderately active, 3 (4.5%) as minimally active, and 1 (1.5%) as HEPA active. On the other hand, majority of the HI students 33 (53.2%) were classified as HEPA active, 27 (43.5%) were classified as moderately active, and 2 (3.2%) were classified as minimally active.

Research Question Two: What is the body composition variables (BMI, WC & WHR), of VI and HI students in FCEO?

Table 3a

Descriptive Analysis of Body Composition Variables of VI and HI Students in FCEO

BC Variables	Mean	Std. Deviation	Male (n = 88)		Female (n = 41)	
			Mean	Std. Deviation	Mean	Std. Deviation
BMI (in kg/m^2)	20.742636	2.6391220	-	-	-	-
WC (in cm)	-	-	75.27	7.556	77.56	8.022
WHR (in cm)	-	-	.8330	.04133	.8563	.02763

The results show the average measurement of BMI (20.74kg/m^2) was taken for the participants, (75.27cm and 77.56cm) WC was measured for male and female participants respectively and (.8330cm and .8563cm) WHR was measured for male and female participants respectively.

Table 3b

Descriptive Analysis of Body Composition Variables of VI and HI Students in FCEO

BC Ratings	Visually Impaired (n = 67)		Hearing Impaired (n = 62)	
	Frequency	Percent	Frequency	Percent
BMI				
Underweight	7	10.4	7	11.3
Normal	51	76.1	52	83.9
Overweight	8	11.9	3	4.8
Obese Class 1	1	1.5		
Total	67	100.0	62	100.0
WC				
Normal	51	82.3	51	82.3
High risk	11	17.7	11	17.7
Total	62	100.0	62	100.0
WHR				
Normal	43	64.2	38	61.3
High	24	35.8	24	38.7
Total	67	100.0	62	100.0

The results show that majority of the VI participants 51 (76.1%) were categorised having "normal BMI" while the majority of the HI participants 52 (83.9%) were categorised having "normal BMI". The result also shows that 51 (82.3%) of VI and HI participants were categorised having "normal WC" respectively. Furthermore, 42 (64.2%) of VI participants were categorised having "normal WHR" while 38 (61.3%) of HI participants were categorised having "normal WHR".

Research Question three: What is the influence of PAL on body composition variables (BMI, WHR and %BF) of VI and HI students in FCEO?

Table 4

Influence of PAL on Health Status of VI and HI students in FCEO

PAL Rating	BC Variables	VI Students (n = 67)				HI Students (n = 62)			
		n	Minimum	Maximum	M ± SD	**n**	Minimum	Maximum	M ± SD
Minimally Active	WC	3	72	83	75.67 ± 6.35	2	77	77	77.00 ± 0.00
	BMI		16.80	23.90	19.17 ± 4.10		21.50	21.50	21.50 ± 0.00
	WHR		0.86	0.88	0.87 ± 0.01		0.88	0.88	0.88 ± 0.00
Moderately Active	WC	63	64.00	109.00	76.49 ± 8.06	27	64.00	85.00	74.07 ± 5.68
	BMI		14.30	32.10	20.78 ± 2.83		16.40	23.90	20.23 ± 2.25
	WHR		0.76	0.91	0.84 ± 0.04		0.77	0.87	0.83 ± 0.04
HEPA Active	WC	1	73.00	73.00	73.00 ± 0.00	33	66.00	100.00	76.70 ± 9.02
	BMI		19.20	19.20	19.20 ± 0.00		17.50	27.50	21.24 ± 2.52
	WHR		0.79	0.79	0.79 ± 0.00		0.78	0.90	0.84 ± 0.04

Out of 67 VI and HI participants; 3 VI and 2 HI participants were classified as minimally active respectively. The table also reveals that 63 VI and 27 HI participants were classified as moderately active respectively. Moreover, 1 VI and 33 HI participants were classified as Hepa active respectively. The mean and standard

deviation shows the relationship between their physical activity level (minimally, moderately and Hepa active) and body composition variables of VI and HI students.

Hypotheses Testing

H_{o1}: There is no significant influence of PAL on body composition variables (WC, BMI & WHR) of VI and HI students in FCEO.

Table 5a

Model Summary of Multiple Regression Analysis of the Influence of PAL on Body Composition of VI and HI Students in FCEO

BC Variables	Model	Nature of Impairment	R	R^2	Adjusted R^2	SEE	ANOVA F	df 1	df 2	Sig.
WC	1	Visual	.165[b]	.027	.012	7.852	1.820	1	65	.182
	2	Hearing	.004[b]	.000	-.017	7.687	.001	1	60	.976
BMI	1	Visual	.032[b]	.001	-.014	2.880	0.065	1	65	.799
	2	Hearing	.110[b]	.012	-.004	2.405	0.730	1	60	.369
WHR	1	Visual	.357[b]	.127	.114	0.036	9.473	1	65	.003*
	2	Hearing	.070[b]	.005	-.012	0.040	0.292	1	60	.591

$p \leq 0.05$; *significant

The results on table 12a show the model summary of multiple regression analysis for the influence of PAL on body composition of VI and HI students in FCEO (n = 129). PAL had significant influence on only the WHR of the VI students. There was a moderate multiple correlation between PAL and WHR of the VI student only R .357, accounting for about 12.7% variation in their health status R^2 .127, SEE 0.036. The model was a suitable predictor of their body composition using WHR as an indicator $F(1, 65) = 9.473$, p .003.

Table 5b

Coefficient of PAL Model in Predicting Body Composition of VI and HI Students in FCEO

BC Variable	Nature of Impairment		Beta (β)	*T*	Sig.
		(Constant)		39.591	.000
	Visually Impaired		-.357	-3.078	.003*
WHR					
		(Constant)		40.295	.000
	Hearing Impaired		-.070	-.541	.591

The result revealed a negative influence of PAL on the WHR of the VI students β -.357, *t* -3.078, p .003. This implies that PAL has influence in reduction of WHR indicating an improvement in health status of the VI students.

H_{o2}: There is no significant difference between PAL of VI and HI students in Federal College of Education (Special) Oyo.

Table 5: t-test Analysis showing the difference between PAL of VI and HI Students in FCEO

Variable	Nature of Impairment	n	M ± SD	MD	SED	*t*	df	Sig.	η^2
PAL (in METs)	Visual	67	2376.55 ± 461.16	630.48	109.42	5.660	127	.000*	0.20
	Hearing	62	3007.03 ± 756.67						

$p \leq 0.05$; * significant

Table 5 shows independent sample *t*-test analysis of difference between the PAL of the VI and HI students. The result revealed that the HI students were significantly more physically active than the VI students with a mean difference (MD) 630.48, standard error difference (SED) 109.42 METs per week, $t(127) = 5.660$, p .000. There was a large effect size, $\eta^2 = 0.20$ indicating that the PAL of HI students was about 20% higher than the PAL of VI students. Based on this the stated null hypothesis was rejected.

H_{03}: There is no significant difference in body composition variables (WC, BMI & WHR) of VI and HI students in FCEO.

Table 6*: t-test Analysis of Difference between Body Composition Variables of VI and HI Students in FCEO*

BC variables	Nature of Impairment	n	M ± SD	MD	SED	*t*	Df	Sig.	η^2
WC (in cm)	Visual	67	76.40 ± 7.90	0.84	1.37	0.612	127	.541	-
	Hearing	62	75.56 ± 7.62						
BMI (in kg/m^2)	Visual	67	20.68 ± 2.86	0.12	0.47	0.263	127	.793	-
	Hearing	62	20.80 ± 2.40						
WHR (in cm)	Visual	67	0.84 ± 0.04	0.01	0.01	1.208	127	.229	-
	Hearing	62							

Table 6 shows independent sample *t*-test analysis of difference between the body composition variables of VI and HI students in FCEO. The result revealed that there is no significant difference in body composition variables of the participants.

Discussion of Findings

The discussion of findings is based on the influence of Physical Activity Level on Body Composition of VI and HI students of FCEO. Visual impaired person are less active when compared to their sighted counterparts. Inability to navigate well, difficulty in adapting to environment and safety problems often limits their activity participation level (Tabrett & Lathan, 2011), which can negatively affect their heath conditions such as muscle weakness, loss of balance, overweight and vulnerability to chronic diseases. Low physical fitness level and impaired motor skills of visually impaired persons are suggested to arise from limited participation in daily activities (Biagini. Bastiani & Sebatiani, 2022). Economic and societal costs may be the resultant implications of hearing loss which is now an important public health concern. Nigeria hearing impairments are generally neglected in comparison with other disabling conditions, mostly because hearing impairments are unseen or invisible disabilities (Adobamen,

2013). Hearing impairment seem not to attract attention from appropriate quarters but it is a life-long impairment that could damage development of necessary skills and it could also prevent an individual from sufficient or efficient use of hearing mechanism most especially acquisition of information or knowledge through auditory channel.

All body composition variables of the participants predicted good health. The efforts targeted towards health promotion void of negative own body image, poor self-concept and poor self-esteem has started yielding positive results. This finding supports the assertion of Grynszpan, Weiss, Perez-Diaz and Gal (2014) that proper interaction, association, association and connection among special needs persons improve the mood of such individuals as well as improving their sense of belonging and boosting their self-esteem. Inability to navigate well, difficulty in adapting to environment and safety problems often limits their activity participation level (Tabrett & Lathan, 2011), which can negatively affect their health conditions such as muscle weakness, loss of balance, overweight and vulnerability to chronic diseases.

It was discovered from the study that PAL influences only waist-hip-ratio of VI participants by 12.7% and HI participants by 11.7%. Reduction in waist-hip-ratio of VI participants indicates good health. The waist-hip-ratio measured in the study revealed that the majority of the participants had moderate body fat. Therefore, there is low tendency in the rate at which the participants could become obese as it has been established that high body fat is an independent risk factor for obesity and cardiovascular risk (Dominic et al., 2017). Generally, the PAL of the participants was at moderate level. The differences in PAL of the two groups was checked and it was discovered that the PAL of HI participants was about 20% higher than the PAL of VI participants. This implies that HI participants are more active than VI participants. This finding corroborates with the study of Tabrett and Latham (2011) that VI persons are less active when compared to their sighted counterparts as a result of their inability to navigate well, difficulty in adapting to environment and safety problems which often limits the activity participation level of people with visual impairment.

Impairment is the difficulty experienced in body functions or structures that dictates the level at which the affected body part could be used in carrying out daily tasks effectively. Disability is not an attribute of a person but it is the outcome of the interaction between impaired persons and environmental barriers which hinders the full and equal participation alongside people without disability in the society. Disability is caused by the restrictions placed by the society through unequal affection, accommodation, attention and hostile treatment given to impaired persons. Society seems to be the main contributing factor to disability as a result of high barriers, negative attitudes and participation restrictions placed on impaired people in which visually and hearing impaired persons are not left out. WHO (2011) opined that disability is a complex, dynamic, multidimensional, and contested phenomenon. Disability does not depend solely on the functional limitations relating to an individual's impairment, but also on the environment. Environment plays significant roles in the life of every individual.

The impact of level of impairment experienced by the participants determines the level of involvement in physical activity. VI has more limiting effect on daily living and activity of the participants despite the fact that assistive technology has been established to assist them more to overcome mobility challenges, communication and

social interaction. Moderately active participants could over time become minimally active if inactive lifestyle continues. This finding corroborates the study of Dominic, Onifade and Lajide (2010) that lower METs signify sedentariness thereby predisposing them to the risk of experiencing co-morbidities, diabetes and cancers among others. People with special needs may be prone to many health challenges and they are at increased risk of experiencing co-morbidities which may be due to inactive lifestyle (Reichard & Fox 2013; Reichard, Stolzle & Fox, 2011). Increase in physical activity and exercise could be an antidote for the risk of sedentariness and chronic disorders (Dominic et al., 2017).

Conclusion

Based on the findings of the study, it was concluded that; PAL has influence in reduction of WHR, indicating an improvement in health status of the VI students; PAL of HI is higher than PAL of VI student in FCEO; and both VI and HI students had same level of body composition in FCEO.

Recommendations

Based on the conclusion of the study, the following recommendations were made:

1. Exercise intervention programmes that increases PAL and enhances health promotion should be organised for students with special-needs by school authority.
2. Physical education lecturer should design flexible exercise programmes that accommodate both VI and HI students in FCEO.

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