IOSR Journal of Sports and Physical Education (IOSR-JSPE)
e-ISSN: 2347-6737, p-ISSN: 2347-6745, Volume 7, Issue 4, (Jul. – Aug. 2020), PP 01-05
www.iosrjournals.org

Physical Activity Motives of Pediatrics – An Epidemiological Study

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Abstract
Keywords: *Physical Activity,Surveillance, Epidemiology, Quotient,Health Education*
Background: *Pediatrics physical activity is one of the essential elements in archiving sustainable healthiness of the cognitive quotient, psychomotor quotient, social quotient and affective quotient, thereby maintaining ease of daily activities of children without undue tiredness.This study aimed at scoring measured and evaluated physical activity motives of pediatrics: an epidemiological study in Sierra Leone, with a behavioural attitude in maintaining a healthy altitude in overcoming sedentary behaviours that have the magnitude to trigger non-communicable diseases (NCDs) amongst children, adolescents, youths, adults and the aged.*
Methods: *Motives for Physical Activity Questionnaire Revised (**MPAQ-R**)was the adopted research instrument. The variables wereanalyzed using**IBM-SPSSv.23** Statistics, with a mean and standard deviation ageof **13.0±3.0**, response rate of**100%**and with sampled participantsof **N=204,** rangedfrom **10-18**years,usingsimple random sampling (**SRS**) method of selection.*
Results: *According to the results,the Appearance Motive for pediatric physical activity stood predominant with sum of squares (31.941) and F-value ($F_{5,198;0.05}$ = 10.081) by school.And also predominant with sum of squares (15.373) and F-value ($F_{1,202;0.05}$ = 21.862) by sex.Also, Enjoyment Motive stood predominant with sum of squares (1.281) and F-value ($F_{1,202;0.05}$ = 1.698) by age range for physical activity motives of pediatrics.*
Conclusion and Recommendation: *Conclusively therefore, appearance, competence and enjoyment motives stood out predominant amongst other motives when surveillanced by schools, sex and age range, thereby supporting both intrinsic and extrinsic motives for physical activity motives of pediatrics. In recommendation, that physical activity for pediatrics be more successful with emphasis placed on allowing the children to freely choose their motives for engaging in physical activities. In addition, emphasize public health education in schools for children to understand about preventing cardiovascular related sicknesses under non-communicable diseases (NCDs) and maintaining functional movement balance (FMB) and quotient efficiency (QE).*

Date of Submission: 26-06-2020 Date of Acceptance: 15-07-2020

I. Introduction

Pediatrics physical activity is one of the essential elements in archiving sustainable healthiness of the cognitive quotient,psychomotor quotient, social quotient and affective quotient, thereby maintaining ease of daily activities of children without undue tiredness. In Sierra Leone, it is been evidenced that children, adolescents and youths engagement in physical activity daily (PAD) is relatively better when compared to that of adults[31]. Moreover,behaviours such as physical inactivity, will serve as a building block for the infection of non-communicable diseases (NCDs) such as cardiovascular related diseases[31].Physical activity motives of pediatrics can be surveillanced through the monitoring, measurement and evaluation of Enjoyment motive, Competence motive, Appearance motive, Fitness motive and Social motive respectively. In doing that, functional movement screening (FMS) should be the watchword considering strict adherence to health & nutrition educators and exercise physiologists advice[31].The lack of physical activity in children will lead to dysfunctional movement but remedial measures and rehabilitation is possible by freely allowing kids to choose carefully their physical activities based on individual motives. In addition, the proceeding paragraphs will display the remedial measures and it related activities.

One of the remedial measuresworth considering arehealth literacy for children andadolescentswith or without preexisting related medical condition(s) such asasthma[1], stress[3], muscle atrophy and weakness[2][4]and VO_2max[5], which are essential elements in exercise prescription during physical activity. In addition, measures

worth considering are public health education[6][22][25], health extensionservices[7] andphysical activity epidemiology[8][29][30], for the realization of children's physical activity motives.Another remedial measures worth considering areprogrammes in physical education[9], public health and physical education[26], health and physical education[27], physical education literacy[10], individual physical and mental health[11], ageing processes[18][12][20], health education strategy[13], physical activity balanced decisionand self-efficacy[14][15][23]. In addition, other measures worth considering are programmes in observing leisure time[16], physical activity behavioural regulation[19] sports injuriesprevention[17], physical literacy[24], physical activity motives and motivation[28][21], which will serve as a prerequisite for the sustainability of children's physical activity motives.This study aimed at scoring measuredand evaluated physical activity motives of pediatrics: an epidemiological studyin Sierra Leone,with a behavioural attitude in maintaining a healthy altitude in overcoming sedentary behaviours that have the magnitude to trigger non-communicable diseases (NCDs) amongst children.

II. Materials And Methods

Respondents

The survey researchsampled participants oftwo hundred and four(**N=204)**,witha mean and standard deviationageof **13.0±3.0** with a **100%**response rateandwith an age range of1**0-16** years,selected using a process of simple random sampling **(SRS)**strategy, mainlyamongstSix JSS (JuniorSecondary School) Pupilsin Bo.

Instrumentation

Motives for Physical Activity Questionnaire Revised (**MPAQ-R**) was the adopted research instrument used in the research, with evidence of validity and reliability supported by test retest reliability of Cronbach's Alpha Reliability of (**0.760**), which was previously used by Bebeley et al.[7][21]

Procedure

The measuring and scoring of the survey research for participants took place individually in the school compound using theprocedural instructions provided for by the survey research instrument, using thecensus survey pro and entry (**CSPro &Entry**) systemssoftware application installed ontablets, smart phones and computers accordingly.

Analysis

An inferential Statistics of Non-Parametric Testsusing the tool of Analysis of Variance (**ANOVA**) and DescriptiveStatistical Tests from **IBM-SPSSv.23** Statistics were utilised to compute the data, analyzeand compare the survey research findings at significant value**P<0.05.**

III. Results

The Analysis of Variance (**ANOVA**)statistics of **Physical Activity Motives (PAM)**by all schools: Appearance Motive stood predominant with sum of squares (31.941) and F-value($F_{5,198;0.05}$ = 10.081)and Social Motive stood less dominant with sum of squares (0.201) and F-value ($F_{5,198;0.05}$ = 1.192).In addition, Bo Schoolscored highest for Competence and Enjoyment Motiveswith a meanvalue (7.35) each and Milton Comprehensivescored lowest for Competence and Enjoyment Motives with a meanvalue (7.03)eachas in tables 1&2.

Table 1: Physical Activity Motives (PAM) of Pediatrics by School (N=204)

Motives for Physical Activity Epidemiology	Analysis of Variance (ANOVA) Statistics				
	Sum of Squares	df	Mean Square	F	Sig.
Enjoyment	2.706	5	.541	.710	.616
Competence	2.294	5	.459	.656	.657
Appearance	31.941	5	6.388	10.081	<.001
Fitness	.510	5	.102	1.063	.382
Social	.201	5	.040	1.192	.314

Table 2: Physical Activity Motives (PAM) of Pediatrics by School (N=204)

Motives for Physical Activity Epidemiology		ANOVA Descriptive Statistics				
		n	Mean	Standard Deviation	95%-CI-Mean Lower	Upper
Enjoyment	QRS-Bo	34	7.06	.239	6.98	7.14
	Methodist Girls-Bo	34	7.24	.781	6.96	7.51
	CKC-Bo	34	7.06	.239	6.98	7.14
	Bo School-Bo	34	7.35	1.889	6.69	8.01
	Milton Comprehensive-Bo	34	7.03	.171	6.97	7.09
	UCC-Bo	34	7.15	.500	6.97	7.32
Competence	QRS-Bo	34	7.29	.719	7.04	7.54
	Methodist Girls-Bo	34	7.29	.629	7.07	7.51
	CKC-Bo	34	7.18	.521	6.99	7.36
	Bo School-Bo	34	7.35	1.555	6.81	7.90
	Milton Comprehensive-Bo	34	7.03	.171	6.97	7.09

	UCC-Bo	34	7.26	.751	7.00	7.53
Appearance	QRS-Bo	34	6.15	.500	5.97	6.32
	Methodist Girls-Bo	34	7.09	1.190	6.67	7.50
	CKC-Bo	34	6.12	.409	5.97	6.26
	Bo School-Bo	34	6.24	.781	5.96	6.51
	Milton Comprehensive-Bo	34	6.06	.239	5.98	6.14
	UCC-Bo	34	6.82	1.141	6.43	7.22
Fitness	QRS-Bo	34	5.00	<.001	5.00	5.00
	Methodist Girls-Bo	34	5.03	.171	4.97	5.09
	CKC-Bo	34	5.12	.478	4.95	5.28
	Bo School-Bo	34	5.00	<.001	5.00	5.00
	Milton Comprehensive-Bo	34	5.12	.537	4.93	5.31
	UCC-Bo	34	5.03	.171	4.97	5.09
Social	QRS-Bo	34	5.00	<.001	5.00	5.00
	Methodist Girls-Bo	34	5.09	.379	4.96	5.22
	CKC-Bo	34	5.00	<.001	5.00	5.00
	Bo School-Bo	34	5.03	.171	4.97	5.09
	Milton Comprehensive-Bo	34	5.00	<.001	5.00	5.00
	UCC-Bo	34	5.03	.171	4.97	5.09

Note: CI = Confidence Interval

The Analysis of Variance (**ANOVA**)statistics of **Physical Activity Motives (PAM)** by all sex: Appearance Motive stood predominant with sum of squares (15.373) and F-value ($F_{1,202;0.05}$ = 21.862) and Competence Motive stood less dominant with sum of squares (<0.001) and F-value ($F_{1,202;0.05}$ = <0.001). In addition, Males and Females scored equal highest for Competence Motive with a meanvalue (7.24) each as in tables 3&4.

Table 3: Physical Activity Epidemiology Motives of Pediatrics by Sex (N=204)

Motives for Physical Activity Epidemiology	Analysis of Variance (ANOVA) Statistics				
	Sum of Squares	df	Mean Square	F	Sig.
Enjoyment	.176	1	.176	.232	.630
Competence	<.001	1	<.001	<.001	1.000
Appearance	15.373	1	15.373	21.862	<.001
Fitness	.078	1	.078	.815	.368
Social	.005	1	.005	.144	.705

Table 4: Physical Activity Epidemiology Motives of Pediatrics by Sex (N=204)

Motives for Physical Activity Epidemiology		ANOVA Descriptive Statistics				
		n	Mean	Standard Deviation	95%-CI-Mean	
					Lower	Upper
Enjoyment	Male	102	7.18	1.129	6.95	7.40
	Female	102	7.12	.493	7.02	7.21
Competence	Male	102	7.24	1.007	7.04	7.43
	Female	102	7.24	.616	7.11	7.36
Appearance	Male	102	6.14	.527	6.03	6.24
	Female	102	6.69	1.062	6.48	6.89
Fitness	Male	102	5.07	.404	4.99	5.15
	Female	102	5.03	.170	5.00	5.06
Social	Male	102	5.02	.139	4.99	5.05
	Female	102	5.03	.221	4.99	5.07

Note: CI = Confidence Interval

The Analysis of Variance (**ANOVA**)statistics of **Physical Activity Motives (PAM)** by all age range: Enjoyment Motive stood predominant with sum of squares (1.281) and F-value ($F_{1,202;0.05}$ = 1.698) and Fitness Motive stood less dominant with sum of squares (<0.001) and F-value($F_{1,202;0.05}$ = <0.001). In addition, Age 15-18scored highest for Enjoyment with mean value (7.38) and Age 12-15 scored lower for Enjoyment Motive with a meanvalue (7.12) as in tables 5&6.

Table 5: Physical Activity Epidemiology Motives of Pediatrics by Age Range (N=204)

Motives for Physical Activity Epidemiology	Analysis of Variance (ANOVA) Statistics				
	Sum of Squares	df	Mean Square	F	Sig.
Enjoyment	1.281	1	1.281	1.698	.194
Competence	.225	1	.225	.324	.570
Appearance	.294	1	.294	.378	.539
Fitness	<.001	1	<.001	<.001	.983
Social	.117	1	.117	3.499	.063

Table 6: Physical Activity Epidemiology Motives of Pediatrics by Age Range (N=204)

Motives for Physical Activity Epidemiology		ANOVA Descriptive Statistics				
		n	Mean	Standard Deviation	95%-CI-Mean	
					Lower	Upper
Enjoyment	12-15	183	7.12	.850	7.00	7.24
	15-18	21	7.38	1.024	6.92	7.85
Competence	12-15	183	7.22	.838	7.10	7.35
	15-18	21	7.33	.796	6.97	7.70
Appearance	12-15	183	6.40	.858	6.27	6.52
	15-18	21	6.52	1.078	6.03	7.01
Fitness	12-15	183	5.05	.319	5.00	5.10
	15-18	21	5.05	.218	4.95	5.15
Social	12-15	183	5.02	.165	4.99	5.04
	15-18	21	5.10	.301	4.96	5.23

Note: CI = Confidence Interval

IV. Discussion

Physical activity motives of paediatrics will serve as remedial and rehabilitation measures for functional movement imbalance (FMI) in children, which is mostly due to physical inactivity in school and at home.Functional movement imbalance in children will lead to non-communicable diseases (NCDs) such as quotients deficiency (QD) in the holistic development of children. This can be evidence in the physical activity motives of paediatrics survey under discuss focusing on the schools, sex and the age range of the children.

Under schools, epidemiological surveillance result indicates that physical activity motives (PAM) of pediatrics favour more of appearance motive, competence motive and enjoyment motive when compared amongst schools, which is an indication of both intrinsic and extrinsic motives for physical activity (IE-MPA). This survey is in linewith theepidemiological surveillance screening of functional movement (ESS-FM)in children and adolescents physical activity[31][30].

Under sex, the epidemiological surveillance result indicates that physical activity motives (PAM) of pediatrics favour more of appearance motive, competence motive and enjoyment motive when compared between males and females (sex), which also supports both intrinsic and extrinsic motives for physical activity (IE-MPA). This survey is in linewith theepidemiological surveillance screening of functional movement (ESS-FM)in children and adolescents physical activity[31][30].

Under age range, the epidemiological surveillance result indicates that physical activity motives (PAM) of pediatrics favour more of enjoyment motive, appearance motive and competence motive when compared byage range, which again supports both intrinsic and extrinsic motives for physical activity (IE-MPA). This survey is in linewith theepidemiological surveillance screening of functional movement (ESS-FM)in children and adolescents physical activity[31][30].

V. Conclusion And Recommendation

Conclusively therefore, appearance motive, competence motive and enjoyment motive stood out predominant amongst other motives when surveillanced by schools, sex and age range thereby supporting both intrinsic and extrinsic motives for physical activity motives of pediatrics. Which is an indication of remedial and rehabilitation measures for functional movement imbalance (FMI) and quotients deficiency (QD) amongst children.

In recommendation, that physical activity for pediatrics be more successful with emphasis placed on allowing the children to freely (though carefully guided) choose their motives for engaging in physical activities. In addition, emphasize public health education in schools for children to understand about preventing cardiovascular related diseases under non-communicable diseases (NCDs) and maintaining functional movement balance (FMB) and quotient efficiency (QE).

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Acknowledgement:

The authors express thanks and appreciation to all staff and pupils of the two selected secondaryschools, whose immense co-operation rendered this study to fruition.

Conflict of Interests:

The authors declared no conflict of interests regarding the publication of this manuscript.

Samuel Joseph Bebeley (PhD), et. al. "Physical Activity Motives of Pediatrics – An Epidemiological Study." *IOSR Journal of Sports and Physical Education (IOSR-JSPE,)* 7(4) (2020): 01-05.