

PHYSICAL ACTIVITY AMONG HIGHER SECONDARY STUDENTS IN RUPANDEHI DISTRICT OF NEPAL

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Introduction

- Physical inactivity- one of the established modifiable risk factors of Non-communicable diseases (NCDs)
 - increasing among adolescents in high as well as middle and low-income countries (1).
- Globally, four among five adolescents- insufficiently physically active (2).
- NCD risk factors steps survey- Nepal, 2013-
 - 2.3% of the total study population (4.0% male and 0.7% female) aged 15-29 were engaged in low level of physical activity (3).



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- Multisectoral Action Plan for the prevention and control of NCDs-
Nepal aims at 10% relative reduction in prevalence of insufficient physical activity by 2025 in accordance with global NCD target.
- Schools and colleges are the ideal place to develop healthy behaviors including physical activity.

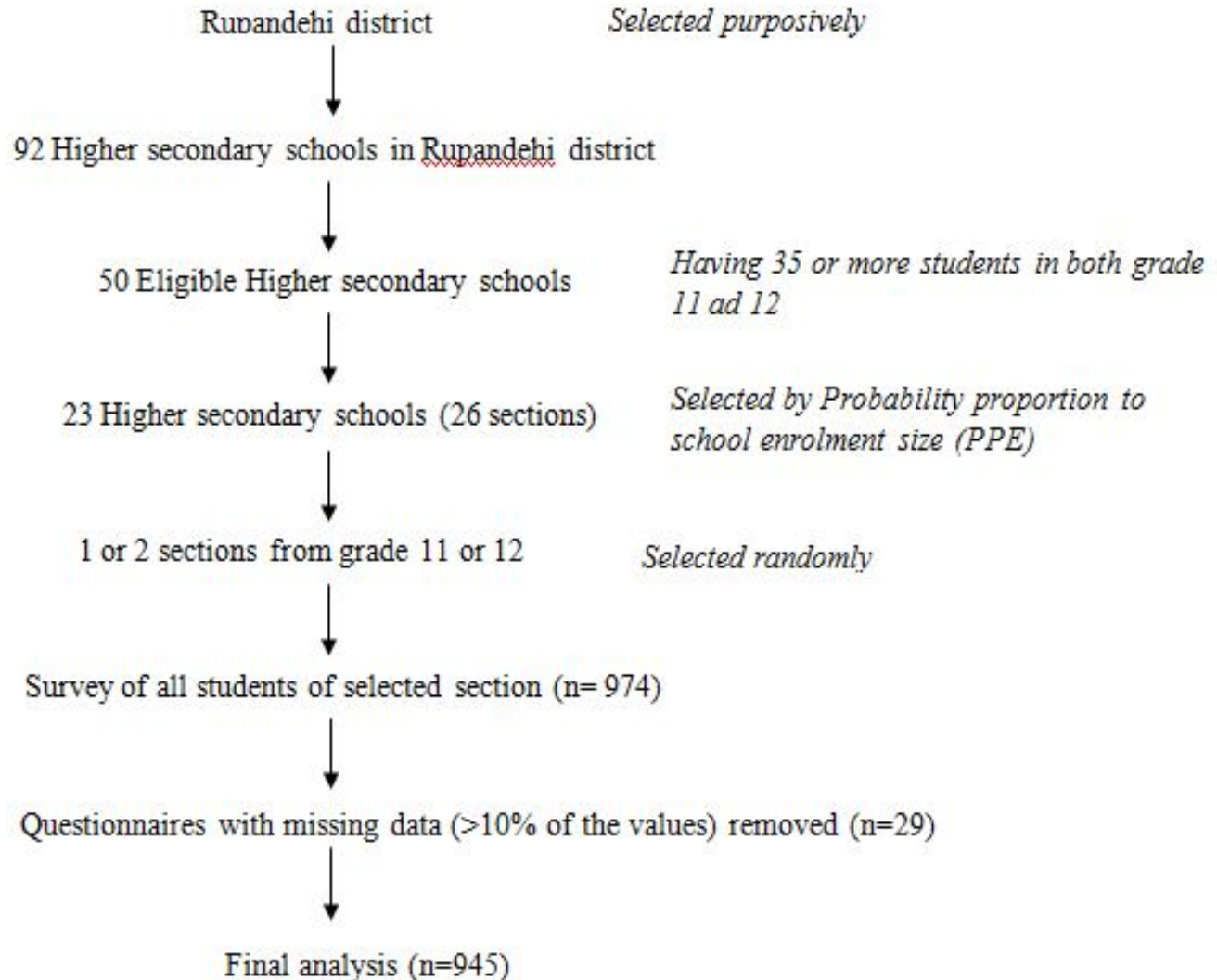
Objectives

- To determine the prevalence of low physical activity among higher secondary students
- To find out the factors associated with low physical activity

Methodology

- Design: Cross-sectional
- Study area: Rupandehi district
- Study population: Students of grade 11 and 12

Methodology (contd...)



Methodology (contd...)

- Global Physical Activity Questionnaire (GPAQ) was self-administered among the students. At first, the students were oriented for almost 15 minutes on the types of physical activity and the cards showing them to ensure that activities are rightly classified as moderate and vigorous.

Physical activity calculation

- Work domain

Vigorous MET-minutes/week at work = 8 * Vigorous-intensity activity minutes (P2) * Vigorous-intensity days at work (P3)

Moderate MET-minutes/week at work = 4 * Moderate-intensity activity minutes (P5) * Moderate-intensity days at work (P6)

Total Work MET-minutes/week = Vigorous MET-minutes/week scores + Moderate MET-minutes/week scores

- Travel domain

Total travel MET-minutes/week = 4 * walking or cycling minutes (P8) * walking or cycling days for transportation (P9)

Physical activity calculation (contd...)

- Recreation domain

Vigorous recreational MET-minutes/week = 8 * Vigorous-intensity activity minutes (P11) * Vigorous-intensity days (P12)

Moderate recreational MET-minutes/week = 4 * Moderate-intensity activity minutes (P14) * Moderate-intensity days (P15)

Total Recreational MET-minutes/week = Vigorous MET-minutes/week scores + Moderate MET-minutes/week scores

- Total Physical Activity scores

Total PA score = Total Work MET-minutes/week + Total travel MET-minutes/week + Total Recreational MET-minutes/week

Physical activity calculation (contd...)

Level of physical activity was determined as:

Level of total physical activity	Physical activity cut-off value
High	IF: (P2 + P5 + P8 + P11 + P14) \geq 7 days AND total physical activity MET minutes per week is \geq 3000
Moderate	IF: (P2 + P5 + P8 + P11 + P14) \geq 5 days AND Total physical activity MET minutes per week \geq 600
Low	IF: the value does not reach the criteria for either high or moderate levels of physical activity

Ethical considerations

- Ethical approval was obtained from Nepal Health Research Council (NHRC).
- Consent was taken from administrative authority of respective schools to reach to the students.
- Written informed consent was taken from each students prior to data collection.
- Objective of the study was shared, rights of the participants was explained and confidentiality of the information was ensured.

Results

Individual characteristics

Characteristics	n	%
Age of student		
Mean \pm SD = 17.16 \pm 1.01 years		
Sex		
Male	471	49.8
Female	474	50.2
Grade		
11	331	35.0
12	614	65.0
Tobacco use		
Yes	30	3.2
No	915	96.8

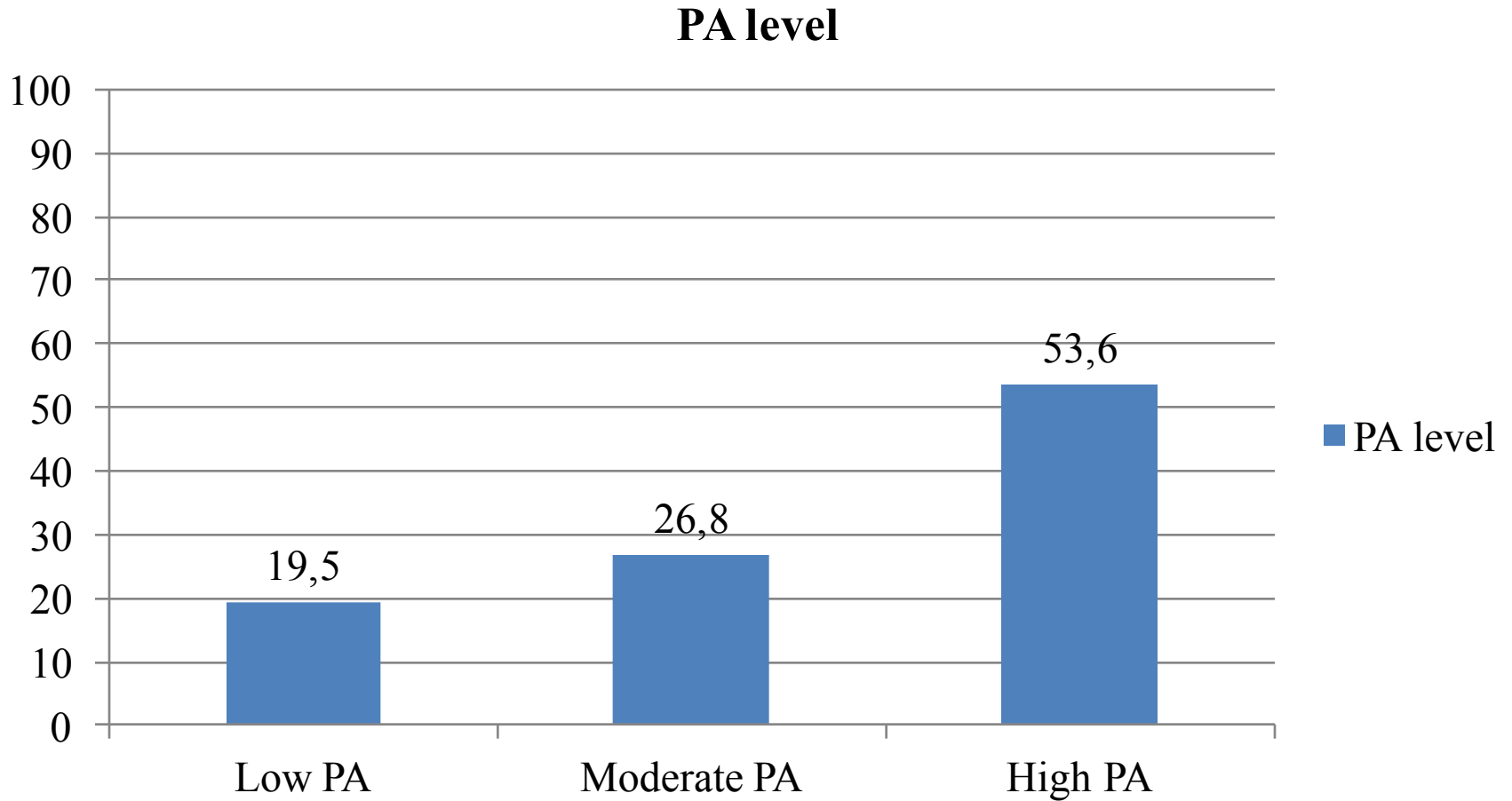
Individual characteristics (contd...)

Alcohol intake		
Yes	42	4.4
No	903	95.6
Type of campus		
Public	330	34.9
Private	615	65.1
Type of family		
Nuclear family	682	72.2
Non-nuclear family	263	27.8
Perceived support from family		
Yes	890	94.2
No	55	5.8
Perceived support from friends (peer support)		
Yes	900	95.2
No	45	4.8

Environmental characteristics

Characteristics	n	%
Extracurricular activities at campus		
Yes	654	69.2
No	291	30.8
Playground at campus		
Yes	792	83.9
No	152	16.1
Playground or park around home		
Yes	645	68.3
No	300	31.7
Adequate space to play or walk around home		
Yes	709	75
No	236	25
Vehicle used while going to campus		
Walking	339	35.9
Cycle	134	14.2
Others	472	49.9

Physical activity level



Domain specific PA scores

Characteristics	n	Median MET- minutes/day	Q1 ~ Q3	% of total PA
Total PA score		105.0	42.85 ~ 201.42	
Domain specific PA scores				
Work-related	155	NA	NA	14.79
Travel-related	945	40.0	8.57 ~ 77.14	38.12
Recreation- related	945	44.28	6.42 ~ 102.85	47.09

Factors associated with PA

Characteristics	Categories	PA level		p-value
		Not low	Low	
Age	15-18 years	702	178	0.080
	19-22 years	56	7	
Sex	Male	433	38	<0.001*
	Female	327	147	
Grade	11	257	74	0.122
	12	503	111	
Type of campus	Public	282	48	0.004*
	Private	478	137	
Campus time	Morning	297	75	0.237
	Day	463	110	
Family type	Nuclear	125	557	0.119
	Non-nuclear	60	203	
Alcohol use	Yes	7	178	0.627
	No	35	725	

*statistically significant

Factors associated with PA

Characteristics	Categories	PA level		p-value
		Not low	Low	
Tobacco use	Yes	27	3	0.179
	No	733	182	
Extracurricular activities at campus	Yes	518	136	0.157
	No	242	49	
Playground at campus	Yes	627	166	0.016*
	No	133	19	
Playground/park around home	Yes	535	110	0.004*
	No	225	75	
Adequate space to play/walk around home	Yes	577	132	0.198
	No	183	53	
Vehicle used	Walking	272	67	<0.001*
	Cycle	126	8	
	Motorcycle/4-wheeled vehicle	362	110	

*statistically significant

Factors associated with PA

Characteristics	Categories	PA level		p-value
		Not low	Low	
Family support to PA	Yes	721	169	0.067
	No	39	16	
Peer support to PA	Yes	727	173	0.219
	No	33	12	

Multivariate logistic regression

Variables in the equation	p-value	Odds ratio	95% C.I	
			Lower	Upper
Age (Ref: 19-22 years)	0.328	1.557	0.642	3.776
Sex (Ref: Male)	<0.001*	4.431	2.931	6.697
Campus type (Ref: Public)	0.029*	1.611	1.051	2.470
Playground at campus (Ref: Yes)	0.854	0.947	0.531	1.689
Playground/park around home (Ref: Yes)	0.002*	1.771	1.231	2.550
Family support to PA (Ref: Yes)	0.043*	1.985	1.021	3.859
Vehicle used (Ref: Motorcycle/4-wheeled vehicle)	Walking-0.708 Cycle-0.001*	0.929 0.270	0.632 0.121	1.366 0.603

*statistically significant

Conclusion

- Despite low reported national prevalence of low physical activity, this study shows high prevalence among adolescents.
- Also demonstrated association of low physical activity with female, private campus students, absence of playground/park around home, no family support to PA, and motorcycle/4-wheeled vehicle users.
- School physical activity programs are deemed necessary to promote physical activity in schools. However, more studies are needed to corroborate this conclusion.

References

1. World Health Organization. Global status report on noncommunicable diseases 2014.
2. WHO factsheet. Available at:
<http://www.who.int/mediacentre/factsheets/fs385/en/>
3. World Health Organization. Non communicable diseases risk factors: STEPS Survey Nepal 2013.

Thank You