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ORIGINAL ARTICLE

HEALTH PROMOTING BEHAVIOURS AMONG ADOLESCENTS OF GOVERNMENT SCHOOL IN KALIKA MUNICIPALITY, CHITWAN

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ABSTRACT

Introduction: *Health-promoting behaviours (HPB) established during adolescence promote lifelong health and prevent chronic diseases. This study assessed HPB among school-aged adolescents.*

Materials and Methods: *A cross-sectional study was conducted from February to April 2021 among adolescents aged 10–19 years studying in grades 9 and 10 at a government school in Kalika Municipality, Chitwan, Nepal. Data were collected using a semi-structured questionnaire and the Adolescent Lifestyle Profile–Revised 2 (ALP-R2). Descriptive and inferential analyses were performed using SPSS version 20.*

Results: *Among 322 respondents, 51.6% demonstrated a satisfactory level of HPB. Significant associations were found between HPB and sex and fathers' occupation. The highest mean scores were observed in positive life perspective and health responsibility, whereas physical activity had the lowest score.*

Conclusion: *More than half of the adolescents exhibited satisfactory HPB. However, low physical activity highlights the need for targeted interventions. Sex and fathers' occupational status were significant determinants of HPB.*

Keywords: *Adolescent Lifestyle Profile-Revised 2, Health Promoting Behaviours, Health Promotion*

INTRODUCTION

Adolescence is a transition period from childhood into adulthood, characterized by rapid physical changes, sexual development, and psychosocial maturation.[1] Approximately, one-sixth of the global population[1] and 23.62% of the total population of Nepal represents adolescents,[2] a critical target population for health promotion.

Health-promoting behaviours (HPB) are actions that individuals adopt to maintain and improve their health and well-being.[3] The health promoting behaviours during adolescents are foundations for good health in adulthood.[4] However, sedentary behaviour, poor dietary patterns, and stress are increasingly common among adolescents, contributing to the global rise in overweight, obesity, and Non Communicable Diseases.[5,6] Many boys and girls in developing countries enter adolescence undernourished, making them more vulnerable to disease and early death.[4]

Evidence suggests that overweight and obesity during adolescence are likely to persist into adulthood. A longitudinal study reported that 56% of males and 42% of females who were overweight during adolescence remained overweight in adulthood, while 47% of males and 55% of females who were obese continued to be obese later in life. In Nepal, the prevalence of overweight among adolescents has been estimated at 12.2% (95% CI: 8.9–15.5).[7]

Since adolescents spend a substantial amount of their day in school environment,[8]swimming pools, locker

rooms, running/athletics tracks, entrance accessible for student cyclists, bike racks, speed limit signal around the school, and pedestrian crossing were assessed in each school. All participants responded to a questionnaire about frequency and duration of physical education classes, leisure time, and active commuting. Total PA was obtained by adding up all PA domains. Presence of three or more (OR: 1.62; 95% CI: 1.15 to 2.30 schools serve as an ideal setting for healthy promoting behaviors.[9] Age, gender, and socioeconomic status significantly influence adolescents' engagement in health-promoting behaviors.[10] Understanding these behaviours, and their determinants is essential for developing effective health education programs, policies, and interventions targeted at young people. Further, adolescent health should be viewed holistically, encompassing physical, social and emotional wellbeing; as health is a valuable asset for everyday living, not just the absence of disease.[11]

Although studies have examined adolescent health behaviours in various settings, limited research has been conducted in Kalika Municipality, Chitwan. Therefore, this study aimed to examine HPB among school-aged adolescents in Kalika Municipality, Chitwan.

MATERIALS AND METHODS

A cross-sectional study was carried out from February to April, 2021 among adolescents of age group 10-19 years studying in 9th and 10th grade of Government school of Kalika Municipality, Chitwan. Due to the wider variety of students in government school, the site has been chosen. All total 6 government school was visited by researcher before data collection in order to maintain the quality of sampling frame and list the names of all the students. The number of students from each school was selected by using proportionate sampling. The final respondent was then selected with systematic random sampling.

Sample size calculation

Sample size was determined by using the Cochran's formula:

$n_{=}$ (for infinite population)

Z= level of statistical significance at 95% confidence level i.e. 1.96

p= 0.5 (since prevalence of health promoting behaviour is not found)

q=1-p hence q=1-0.5=0.5

d= Acceptable margin of sampling error at 5% i.e. 0.05

Hence substituting the formula,

$$n = \frac{z2pq}{d2}$$

= 384

Then, we optimize the sample size for finite population:

$$n_0 = \frac{n}{[1+\frac{n-1}{N}]}$$

Where,

n= 384

N= 1230 (Total number of students studying in 9th and 10th grade in government school of Kalika Municipality)

Substituting the value, Sample size = 293

And 10% non-response rate was added;

Total sample size= 293+10% of 293= 322

Thus, the total sample size calculated was 322.

Data collection was done using semi-structured questionnaire for sociodemographic characteristics and Adolescent Lifestyle Profile Revised-2 (ALPR-2), a standard tool developed by Gaete et al.[12]to provide evidence of the validity and reliability of the Adolescent Lifestyle Profile-Revised 2 (ALP-R2 which includes seven dimensions such as health responsibility, physical activity, nutrition, positive life perspective, interpersonal relationships, stress management, spiritual management. The ALP-R2 tool demonstrated a Cronbach's alpha of 0.929 for the overall scale, with subscale values ranging between 0.64 and 0.82. The study was commenced after obtaining the ethical clearance from Institutional Review Committee, Chitwan Medical College (CMC-IRC/077/078-189). Data collection was started after obtaining informed consent from participants. Confidentiality was maintained by

excluding participant's names and personal identification and was assured that it wouldn't be accessible to anyone other than researcher.

RESULTS

Socio-demographic characteristics of school going adolescents of Kalika Municipality

A questionnaire was administered to 322 school going adolescents (10-19 years) yielding a response rate of 100%. The age of respondent ranges from 13 and 19 years with median age of 16 years and interquartile range (IQR) 1.25 years. Among them, 57.8% were female. Concerning BMI, 81.6% of the respondents had normal weight and only 1% were obese. (Table 1)

Table 1: Socio-demographic characteristics of school going adolescents of Kalika Municipality (n=322)

Variables	Categories	Frequency (%)
Age group in years	10- 15 years	134 (41.6%)
	16- 19 years	188 (58.4 %)
	Median (IQR)=16 (1.25), Min=13 years; Max=19 years	
Sex	Male	136 (42.2%)
	Female	186 (57.8%)
Grade	Ninth	174 (54%)
	Tenth	148 (46%)
Body Mass Index (BMI)	<18.5 (Underweight)	43 (13.4%)
	18.5-22.9 (Normal weight)	263 (81.6%)
	23-24.5 (Overweight)	13 (4%)
	≥25 (Obesity)	3 (1%)
Ethnicity	Brahmin/Chhetri	85 (26.4%)
	Dalit	45 (14%)
	Janjati	190 (59%)
	Madhesi	2 (0.6%)
Religion	Hinduism	225 (69.9%)
	Buddhism	62 (19.3%)
	Christianity	35 (35%)
Type of family	Nuclear	211 (65.5%)
	Joint	109 (33.9%)
	Extended	2 (0.6%)
Living arrangement	With parents	309 (96%)
	Hostel	6 (1.9%)
	Rent	7 (2.2%)

Family related characteristics of the respondents

Among 322 respondents, 23.3% fathers were illiterate. Among literate fathers, majority 53.4% had completed primary level. Likewise, 34.2% of respondents' mothers were illiterate and 65.8% were literate. 43.8% and 55.6% of the respondents, fathers and mothers were involved in agriculture respectively. Only 25.2% of the respondents reported the presence of chronic diseases among their family members.

Health promoting behaviors among respondents

In health responsibility domain, 23% of the respondents always read articles about health topics. 26.4% of the respondents frequently participated in health promotion and disease prevention programs, 32.9% of the respondents regularly sought guidance from school counselor when needed, and 62.1% of the respondents consistently avoided behavior that negatively impact their health.

In physical activity domain, 43.5% of the respondents frequently engage in active time with their family, 40.7% consistently used their free time for walking or doing something during free time, and 52.2% exercised occasionally until their heart beats fast and perspire.

Regarding nutrition, only 21.1% of the respondents consistently avoided sweets or other high sugar foods, 19.9% of the respondents frequently eat three to five servings of vegetables each day, and 34.2% of the respondents always drinks six or more glasses of water every day.

In the area of positive life perspective, 73% of the respondents are always happy with who they are, 73.9% of the respondents always work towards the important goals of life, and 30.4% of the respondents frequently felt good about themselves when they accomplished something well.

In interpersonal relations domain, 38.2% of the respondents often spend time talking to family, 71.4% of the respondents always congratulate others when they do something well, 15.5% of the respondents sometimes settle conflicts through discussion rather than fighting, and 35.7% of the respondents frequently make a special effort to help others.

Concerning stress management, 33.2% of the respondents

always take time to relax, 28.3% of the respondents sometimes take time to do what they like, and 36.3% of the respondents often discuss their problems with someone close to try and solve them.

Regarding spiritual health, 35.7% of the respondents often talk with others about their spiritual beliefs, 44.4% of the respondents sometimes spend time in prayer and meditation, and 36% of the respondents often use their spiritual beliefs as a guide for what they do.

Health promoting behaviors of respondents on different domains

Regarding the ALP-R2 subscales, respondents have obtained higher median score in positive life perspective and health responsibility, while the lowest median scores in the physical activity domain. (Table 2)

Table 2: Respondents health promoting behaviors score on different domains (n=322)

HPB Scale	Median (IQR)	Minimum; Maximum
Health Responsibility	14 (5)	6; 21
Physical Activity	10 (4)	2; 17
Nutrition	11 (5)	1; 19
Positive life Perspective	15 (3)	9; 18
Interpersonal Relations	13 (3)	7; 18
Stress Management	13 (4)	7; 18
Spiritual Health	11 (4)	1; 17

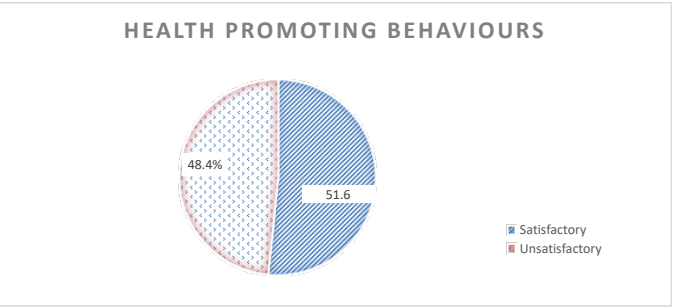

Figure 1: Level of health promoting behaviour among of school going adolescents of Kalika Municipality (n=322)

The level of health promoting behaviours among respondents. 51.6% of the respondents had satisfactory level of health promoting behaviours and 48.4% of respondents had unsatisfactory level of health promoting behaviours. (Figure 1)

Association between level of health promoting behaviour and socio-demographic characteristics of respondents

Bivariate analysis was done to determine the association between level of health promoting behavior and socio-demographic characteristics of respondents. The sex (p=0.02) of the respondents was significantly associated with the health promoting behaviors among respondents with satisfactory level of health promoting behaviors in male (58.8%). (Table 3)

Table 3: Association between the level of health promoting behaviour and socio-demographic characteristics of respondents

Variables	Categories	Level of HPB		χ^2	p-value
		Satisfactory No. (%)	Unsatisfactory No. (%)		
Age group in years	10-15 years	73 (54.5%)	61 (45.5%)	0.786	0.37
	16-19 years	93 (49.5%)	95 (50.5%)		
Sex	Male	80 (58.8%)	56 (41.2%)	4.983	0.02**
	Female	86 (46.2%)	100 (53.8%)		
Grade	Ninth	89 (51.1%)	85 (48.9%)	0.25	0.88
	Tenth	77 (52%)	71 (48%)		
BMI	Underweight	16 (37%)	27 (63%)	4.78	0.091
	Normal weight	151 (57.3%)	112 (42.7%)		
	Overweight[a]	11 (70%)	5 (30%)		
Ethnicity	Dalit/Madhesi	21 (44.7%)	26 (55.3%)	2.233	0.32
	Janjati	96 (50.5%)	94 (49.5%)		
	Brahmin/Chhetri	49 (57.6%)	36 (42.4%)		
Religion	Hindu	113 (50.2%)	112 (49.8%)	0.529	0.46
	Other than Hindu[b]	53 (54.6%)	44 (45.4%)		
Type of family	Nuclear	103 (51.2%)	108 (51.2%)	1.83	0.17
	Joint/Extended	63 (56.8%)	48 (43.2%)		
Living arrangement	With parents	162 (47.6%)	147 (47.6%)	2.372	0.3
	Hostel	2 (33.3%)	4 (66.7%)		
	Rent	2 (28.6%)	5 (71.4%)		

**Statistically significant at p<0.05 (Pearson chi-square test for association at 5 % level of significance)

[a]Overweight- includes both overweight and obesity

[b]Other than Hindu- includes Buddhist and Christianity

Association between the levels of health promoting behaviour among respondent's parents related characteristics

Father's occupational status was found to be significantly

associated with the health promoting behaviors among respondents with satisfactory level of health promoting behaviors among non-agriculture occupation characteristics. (Table 4)

Table 4: Association between the level of health promoting behaviour among respondent's parents related characteristics

Variables	Categories	Level of HPB		χ^2	p-value
		Satisfactory No. (%)	Unsatisfactory No. (%)		
Education status of father	Illiterate	35 (46.7%)	40 (53.3%)	0.935	0.33
	Literate [c]	131 (53%)	116 (47%)		
Education status of mother	Illiterate	54 (49.1%)	56 (50.9%)	0.405	0.52
	Literate [d]	112 (52.8%)	100 (47.2%)		
Occupation of father	Agriculture	63 (44.7%)	78 (55.3%)	4.743	**0.02****
	Non-agriculture [e]	103 (56.9%)	78 (43.1%)		
Occupation of mother	Agriculture/ Housewife	126 (51.4%)	119 (48.6%)	0.06	0.93
	Non-agriculture [f]	40 (51.9%)	37 (48.1%)		

**Statistically significant at p<0.05 (Pearson chi-square test for association at 5 % level of significance)

[c,d]Literate- includes Primary level, secondary level and bachelor and above level education

[e]Non-agriculture in father's employment status- includes business, labor, public services and foreign employment

[f]Non-agriculture in Mothers employment status- includes business, labor and public services

DISCUSSION

In the present study, among the seven subscales of the ALPR-2 scale, adolescents have obtained highest score in positive life perspective followed by health responsibility, interpersonal relations, stress management, spiritual health and the lowest score was in physical activity. This is in the line with the study conducted in Nepal[13]Nepal. Descriptive cross-sectional study was conducted among 201 students of grade nine at a government school of Bharatpur, Chitwan. Data were collected using self-administeredquestionnaire (a standard tool: AHP scale and Turkey,[14] which revealed that students scored lowest in the physical activity domain,and is contrast to the study done in Iran.[15]The highest score in positive life perspective could be due to proper guidance and reinformed shaped by family and school. However, physical activity tends to be lower due to multiple barriers commonly reported among adolescents, including academic pressure, limited access to safe recreational spaces, lack of motivation, and the growing preference for sedentary activities such as screen time.

In this study, over half of the adolescents demonstrated a satisfactory level of health promoting behavior. A similar result was reported in Pondicherry,[16] where more than half of the students also exhibited a high level of health promoting behaviours.

The present study demonstrated a significant association between health-promoting behaviours and sex (p=0.02), with male exhibiting higher levels compared to female. This finding is consistent with Iran[15] which also reported a significant association between health promotion scale and sex (p<0.003). In contrast to Musavian et al.,[15] no significant association was observed between adolescents' health-promoting behaviors and parents' educational status, although their study reported significant relationships with fathers' and mothers' education (p=0.045 and p=0.021, respectively).

A significant association was found between health-promoting behaviors and mothers' education (p=0.033), consistent with findings from Nepal (p=0.002). Fathers' employment was further associated with satisfactory health-promoting behaviors among those in non-agricultural occupations (p=0.02), whereas Musavian et al. reported a significant association with mothers' employment (p=0.008).[15] No significant relationship was observed between adolescents' health-promoting behaviors and mothers' occupational status, similar to findings from Zagazig University, Egypt,[17] where mothers' employment showed no independent association with adolescents' wellness scores.

These findings of our study emphasize the need to strengthen school-based initiatives, particularly programs promoting physical activity, and engaging parents, and promoting supportive environments to improve adolescents' adoption of healthier lifestyles.

CONCLUSIONS

Over half of the adolescents demonstrated a satisfactory level of health-promoting behaviors with the highest scores observed in positive life perspective and health responsibility, while physical activity remained notably low. Sex and fathers' occupational status showed significant associations with adolescents' overall health-promoting behaviors, indicating the influence of socio-demographic factors on adolescents' lifestyle practices.

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CONFLICT OF INTEREST: None

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