

ORIGINAL ARTICLE

Health Promoting Behavior Among School Going Adolescents in Puducherry- A Cross-Sectional Study

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Abstract

Background: Health promotion is considered as a process that strengthens health conditions, shapes attitudes, supports behavioural changes to attain the utmost physical and mental health, and organizes the social and physical environment of a person. **Aim & Objective:** To identify the level of health-promoting behaviour and the associated socio-demographic factors among school-going adolescents in Puducherry. **Settings and Design:** A cross-sectional analytical study was conducted among 705 school-going adolescents of standard IX-XII from five government and private schools in rural and urban areas. **Methods and Material:** Multistage sampling was used to select the subjects and the Adolescent Health Promotion Score (AHP 40) was used to assess the health-promoting behaviour of an adolescent. The data was entered in MS Excel and analysed using SPSS v16. **Statistical analysis used:** Mean \pm SD were used to summarize the Total Adolescent Health Promotion Score. Multiple linear regression model was used to assess the association between socio-demographic variables and Adolescent health promotion behaviour. **Results:** Among the 705 participants, the mean age of the students was 14.9 (\pm 1.4). The mean AHP score of the students was 147.78(\pm 20.59). It was observed that the majority of the students (53%) had a high health promoting behaviour. The number of siblings and father's profession significantly predicted higher scores of adolescent health promoting behaviour. **Conclusions:** More than half of the student population had high level of health promoting behaviour. The family and school related variables had significant association with the health promoting behaviour of adolescents.

Keywords

Health promoting behavior; Adolescents; Students; Health Promotion

Introduction

WHO defines 'Health' as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.(1)There is an intrinsically entwined relation between health of the

individual and health of a population. The health of the collective population is referred to as public health and defined by the Faculty of Public Health (2010) as: 'The science and art of promoting and protecting health and well-being, preventing ill-

health and prolonging life through the organised efforts of society.'

Health promotion is considered as a process that strengthens health conditions, shapes attitudes, supports behavioural changes to attain the utmost physical and mental health, and organizes social and physical environment of a person.(2,3) Based on a health promotion approach, people should be able to accept responsibility for their health and adopt a healthy lifestyle.(4) Adolescents constitute around 1.2 billion of the total population around the world and the majority of these adolescents live in developing countries.(5)As per Wang et al. a good health-promoting behaviour depends on the living habits adopted during early years of life.(6)It has been suggested that health behaviours learned in adolescence set precedence for healthy habits that extend throughout the lifespan and even into next-generation.(7)

Aims & Objectives

To identify the level of health promoting behaviour and the associated socio-demographic factors among school-going adolescents in Puducherry.

Material & Methods

A cross-sectional analytical study was conducted among the school going adolescents of standard IX-XII from government and private schools in rural and urban areas, over a period from June 2018 to March 2019. The district consisted of 110 registered higher secondary schools in both the rural and urban areas as of June 2017.(8) Of these, 78 schools were under the urban and 32 schools in the rural sector. The schools were selected through Multi-stage sampling, the schools were first Stratified based on their location as Rural and Urban and further, the schools were divided as Rural Government, Rural Private, Urban Government, and Urban Private. Each school was considered as a separate cluster and in the selected schools one section from each standard (IX-XII) was selected through simple random sampling and all the students from the selected section were included.

The minimum sample size required to detect 50% adequate health promoting behaviour among higher secondary school students in rural and urban Puducherry with 5% absolute precision, 95% confidence interval (5% alpha error), and 1.5 design effect was calculated to be 576.

The higher secondary school students were distributed a semi-structured questionnaire and the

health promoting behaviour was assessed through Adolescent Health Promotion Scale (AHPS). AHPS was developed by Mei Yen Chan from Taiwan in the year 2003. It is composed of 40 items and has the following 6 subscales: nutrition, social support, health responsibility, life appreciation (self-esteem), exercise, and stress management. A five-point Likert-type scale was used for each item (never, sometimes, often, usually, and always). The AHPS score of each field was obtained by totaling the scores of subjects at subscales, and the total AHPS score was obtained by totaling the scores of all of the subscales. The lowest and the highest possible scores were 40 and 200, respectively. (9)

Permission to use the tools was sought from the authors through email. In the majority of occasions, the original English versions of the scales and questionnaires were utilised. In those instances where the students are not comfortable with the English version, a Tamil translation (regional language) of the same was provided. While preparing the Tamil translation of the scales and questionnaires the standard method of forward translation, back translation, pre-testing and review was utilised. The originality of the questionnaire was preserved and no modification was done during language validation.

Permission was obtained from the Directorate of School Education before conducting the study for government schools and from the school administration for private schools. The selected schools were visited during the agreed convenient time after obtaining permission from the Principals/ Correspondents of the schools after obtaining permission from the Institute Human Ethics Committee. One visit was made to meet the students and distribute the consent and assent forms, later on two visits were made for data collection, hence minimum of three visits were made in each school.

The data from the proforma were entered in Microsoft excel 2016 and analysed using Statistical Package for Social Sciences (SPSS) version 16.(10)

The Kolmogorov-Smirnov test was applied to each variable to test the normality. It was observed that only total adolescent health promotion score followed normal distribution. Mean \pm SD were used to summarize the total AHPS score. Multiple linear regression model was used to assess the association between socio-demographic variables and adolescent health promotion behaviour.

Results

Socio-demographic Characteristics

A total of 705 students from five schools participated. The mean age of the students was 14.9 (± 1.4) years. It is observed that, more than half (52.2%) were female. Majority of the participants were Christian (52.2%), followed by Hindus (47.8%), Muslim (3%), and other religions (1.3%). Half of the students (50.2%) live in a joint family followed by nuclear (46.2%) and few of the students live with only one parent (3.6%). More than half (52.8%) the students had at least one sibling and 9.1% of students had no sibling. The majority of the students belonged to the upper class (26.2%) and lower-middle-class (23.4%). More than half of the students (52.2%) were from schools located in the rural area. About 55.7% of the students were from government schools and the majority of the students learn in English-medium of education (58.2%). [Table 1]

Health promoting behaviour of students

The mean AHP score of the students was 147.78 ± 20.59 . With a minimum score being 87 and maximum score 199. Majority of the students had a score between 147 and 157. The mean AHP score of 147.8 was taken as a cut off and the students were divided into groups of having High and low Health Promoting Behaviour. It was observed that the majority of the students (53%) had a high health promoting behaviour.

Health Promotion Subscales

The distribution of health-promoting behaviour among students based on the six subscales is depicted in [Figure 1]. It was observed the median score of nutrition behaviour was 3.7, social Support 4.1, health responsibility 3.6, life appreciation 4.3, exercise behaviour 3.2 and stress management 3.7.

Predictors of Adolescent Health Promotion Score

Multiple linear regression was done to find the predictors of Adolescent Health Promotion Score [Table 2]. The Socio-demographic factors which had p-value of <0.2 in bivariate analysis was included in the Multiple Linear regression Model. They were gender, type of family, number of siblings, father's occupation, and location of school. The Total Adolescent Health Promotion score was the dependent variable and the socio-demographic variables were taken as the independent variables. After adjusting for confounding factors, it was observed Number of Siblings and Fathers Occupation were the significant Predictors of Adolescent Health

Promotion ($p < 0.05$). ie Higher number of Siblings and a higher level of father's profession were the predictors of Higher Score of Adolescent Health Promotion.

Predictors of Adolescent Health Promotion Subscales

Individual Multiple Linear Regression analysis for each of the subscales such as Nutrition behaviour, Social Support, Health Responsibility, Life Appreciation, Exercise behaviour and Stress Management was done to find the predictors of Subscales. The Regression model was significant for only Nutrition behaviour, Health Responsibility, Exercise behaviour, and Stress Management. The Socio-demographic factors which had p-value of <0.2 in bivariate analysis was included in the Multiple Linear regression Model. It was observed Gender, Socio-economic class, and Type of School were the significant predictors of Adolescent Nutrition Behaviour. ie Male gender, Higher Socio-economic class, and Students from government school were the predictors of a Higher score of Nutrition Behaviour. [Table 3] Similarly, Type of Family, Location of School, and Type of School were the significant predictors of Adolescent Health Responsibility. ie Joint Family, Rural location of schools, and Students from government school were the predictors of the Higher score of Health Responsibility. [Table 4]

Male gender, Lower Standard Classes, Rural location of schools, and Students from government school were the predictors of the Higher score of Exercise behaviour. [Table 5] Similarly, Male gender, Lower Standard Classes, Rural location of schools, and Students from government school were the predictors of Higher score of Exercise behaviour. (Table 5) While Joint Family, Rural location of schools, Students from government school and students from English medium schools were the predictors of Higher score of Stress Management. [Table 6]

Discussion

Though there have been many studies on adolescent health behaviours there are very few studies in India that assess the health promoting behaviour of the adolescents.(11,12,13,14) In the present study, it was observed that more than half of the students (53%) had good health promoting behaviours. In subscale analysis it was observed that scores for life appreciation was highest (4.3) and exercise

behaviour was lowest (3.2). This can be compared with the Iranian study where the students have moderate level of health promoting behaviours and high scores were observed for life appreciation and low scores were health responsibility.(11) Similar results were obtained by a Turkish study where life appreciation had higher scores and nutrition, exercise behaviour had lowest scores.(9)

Majority of the studies around the globe showed significant differences in health promoting behaviours among male and female. (9,11,15,16) With most of the studies reporting higher health promoting behaviours among male students than female students. This was contrast to the present study where there is no significant difference in the level of health promoting behaviour was found. While subscale analysis revealed that males had higher nutrition and exercise behaviour.

A research by Mehta Vet al. in 2015 found that more than 3/4th of the rural school students are actively involved in exercise behaviours. (17) While similar results were observed in the present study and it was interesting to note that government school students had higher score for nutrition behaviour, health responsibility, exercise behaviour and stress management. A study by Langton et al. analysed the family structure and adolescent health behaviour and concluded that adolescents living with both biological parents had better health promoting behaviour than adolescents living with single parents. (18) This is similar to our study where students living in the nuclear and joint family had higher health promoting scores for health responsibility and stress management than students living with single parent. This signifies the role of family in promoting the health behaviour of adolescents. Further study is required to find out the actual role of family in influencing the health promoting behaviour of adolescent.

In a study done by Senguttavan U et al. in Mid-western US state, sibling intimacy was related to greater exercise behaviour and health attitude. (19) This is inconsistent with our study findings that students with higher number of siblings had higher adolescent health promotion score. This again implies the importance of siblings who might be acting as buffer and moral support.

The study had more than 94% response rate and also the present study used a multi-stage sampling technique thereby covering students from all the sectors of the population and also a large number of

students were assessed using a validated questionnaire.

Conclusion

In our study, more than half of the student population had high level of health promoting behaviour. Among the Adolescent Health Promoting behaviours, it was observed that higher number of siblings and higher level of father profession significantly predicted higher score of Total Adolescent Health Promotion score. While school related variables such as type of school and location of school significantly predicted the subscales such as adolescent nutrition behaviour and health responsibility. Thus, future research can be carried on interventions that can improve the health promoting behaviour based on the available findings.

Limitation of the study

The study focused on the school going adolescents only from IX-XII standard hence the findings could not be generalized for early adolescents. The current study being a cross-sectional study was not able to capture trend in the health promoting behaviour of adolescents.

Relevance of the study

Adolescent constitutes 20.9% of the Indian population, but the health behaviour of this group is often neglected. This study tries to explore the health promoting behaviour of the adolescents and the factors associated which helps in building a group of healthy adolescents which, in turn, helps to create a nation of the healthy adult who will be the future resource of the nation.

Authors Contribution

All authors have contributed equally.

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Tables

TABLE 1 DISTRIBUTION OF SOCIO-DEMOGRAPHIC VARIABLE AMONG THE STUDENTS (N=705)

Variable	Label	Summary Statistics, n (%)
Gender	Male	337 (47.8)
	Female	368 (52.2)
Type of Family	Nuclear	326 (46.2)
	Joint	354 (50.2)
	Single Parent	25 (3.6)
Number of Siblings	No Siblings	64 (9.1)
	One Sibling	372 (52.8)
	Two Sibling	178 (25.2)
	More than Two Sibling	91 (12.9)
Standard	IX	198 (28.1)
	X	161 (22.8)
	XI	187 (26.5)
	XII	159 (22.6)

Location of school	Urban	337 (47.8)
	Rural	368(52.2)
Type of School	Government	393 (55.7)
	Private	312 (44.3)
Medium of education	Tamil	295 (41.8)
	English	410 (58.2)

TABLE 2 MULTIPLE LINEAR REGRESSION MODEL SHOWING THE PREDICTORS OF ADOLESCENT HEALTH PROMOTION (N=705)

	Un-standardized Coefficients		Standardized coefficients	t- test	p-value
	<i>b</i>	SE			
Constant	139.036	5.795		23.993	<0.001
Gender	-2.125	1.577	-0.052	-1.347	0.178
Type of Family	-0.727	1.325	-0.021	-0.549	0.584
Number of Siblings	1.756	0.834	0.084	2.106	0.036
Fathers Occupation	1.774	0.756	0.1	2.346	0.019
Location of School	2.919	1.809	0.071	1.613	0.107

TABLE 3 MULTIPLE LINEAR REGRESSION MODEL SHOWING THE PREDICTORS OF ADOLESCENT HEALTH PROMOTION-NUTRITION BEHAVIOUR (N=705)

	Un-standardized Coefficients		Standardized coefficients	t- test	p-value
	<i>b</i>	SE			
Constant	4.072	0.272		14.968	<0.001
Gender	-0.151	0.054	-0.107	-2.785	0.006
Type of Family	-0.092	0.049	-0.078	-1.86	0.063
Mother’s Education	0.046	0.03	0.092	1.525	0.128
Fathers Education	0.055	0.029	0.113	1.912	0.056
Fathers Occupation	0.011	0.028	0.018	0.391	0.696
Socio-economic Class	-0.06	0.022	-0.13	-2.787	0.005
Standard	-0.028	0.024	-0.045	-1.168	0.243
Location of School	0.058	0.067	0.041	0.861	0.39
Type of School	-0.196	0.086	-0.138	-2.265	0.024

TABLE 4 MULTIPLE LINEAR REGRESSION MODEL SHOWING THE PREDICTORS OF ADOLESCENT HEALTH PROMOTION-HEALTH RESPONSIBILITY (N=705)

	Un-standardized Coefficients		Standardized coefficients	t- test	p-value
	<i>b</i>	SE			
Constant	3.336	0.188		17.701	<0.001
Type of Family	-0.1	0.049	-0.08	-2.038	0.042
Number of Siblings	0.05	0.031	0.066	1.635	0.102
Mothers Occupation	0.001	0.028	0.001	0.03	0.976
Location of School	0.351	0.096	0.234	3.659	<0.001
Medium of Education	-0.187	0.101	-0.123	-1.861	0.063
Standard	-0.028	0.024	-0.045	-1.168	0.243
Location of School	0.058	0.067	0.041	0.861	0.39
Type of School	-0.196	0.086	-0.138	-2.265	0.024

TABLE 5 MULTIPLE LINEAR REGRESSION MODEL SHOWING THE PREDICTORS OF ADOLESCENT HEALTH PROMOTION-EXERCISE BEHAVIOUR (N=705)

	Un-standardized Coefficients		Standardized coefficients	t- test	p-value
	b	SE			
Constant	3.889	0.41		9.491	<0.001
Gender	-0.289	0.077	-0.146	-3.757	<0.001
Religion	-0.088	0.068	-0.049	-1.289	0.198
Number of Siblings	0.06	0.04	0.06	1.508	0.132
Mother's Education	0.049	0.041	0.069	1.525	0.235
Mothers Occupation	0.016	0.039	0.024	1.188	0.678
Fathers Education	-0.027	0.036	-0.03	0.415	0.454
Fathers Occupation	0.038	0.038	0.044	-0.749	0.321
Socio-economic Class Standard	0.003	0.03	0.005	0.993	0.916
Location of School	-0.118	0.033	-0.134	-3.618	<0.001
Type of School	0.644	0.146	0.327	4.42	<0.001
Medium of Education	-0.344	0.151	-0.173	-2.272	0.023
	-0.455	0.174	-0.228	-2.612	0.009

TABLE 6 MULTIPLE LINEAR REGRESSION MODEL SHOWING THE PREDICTORS OF ADOLESCENT HEALTH PROMOTION-STRESS MANAGEMENT (N=705)

	Un-standardized Coefficients		Standardized coefficients	t- test	p-value
	b	SE			
Constant	4.701	0.263		17.885	<0.001
Type of Family	-0.169	0.051	-0.134	-3.307	0.001
Mothers education	0.04	0.032	0.074	1.23	0.219
Fathers Education	0.012	0.031	0.024	0.405	0.685
Location of School	0.297	0.102	0.197	2.908	0.004
Type of School	-0.392	0.109	-0.258	-3.611	<0.001
Medium of Education	-0.595	0.127	-0.389	-4.688	<0.001

Figures

FIGURE 1 DISTRIBUTION OF HEALTH-PROMOTING BEHAVIOUR AMONG STUDENTS

