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Student's Knowledge and Practices on Basic School Health Services in Relation to School Health Nurse Program

Jiwan Kumar Poudyal,[1] Trishna Sharma,[1] Sumitra Parajuli,[2] Hari Prasad Upadhyay[3]

[1]Department of Public Health, Shree Medical and Technical College, [2]Department of Nurshing, Bharatpur Hospital Nursing College, [3]Department of Statistics Birendra Multiple Campus, Bharatpur, Chitwan, Nepal.

ABSTRACT

Introduction

Basic school health services (BSHS) provided by the school nurse have the potential to significantly reduce the prevalent preventable health issues at school community. The objective of this study was to assess the of students on basic school health services in relation to school health nurse program. To assess the Students Knowledge and Practices on basic school health services in relation to school health nurse program

Methods

An analytical cross-sectional study conducted among 313 students on basic school health services in schools with and without implementation of school health nurse program using a non-probability purposive sampling technique. Data were collected using a self-administered questionnaire and an observation check list, and analyzed using descriptive and inferential statistics.

Results

There is statistically significant difference in mean score of knowledge among students with School Health Nurse Program (SHNP) and not having school health nurse program. The practice of basic school health was significant association on how at comfort students felt when dealing with health issues ($p<0.001$), providing first aid and emergency care ($p<0.001$), conducting screening programs ($p<0.001$), distribution of free iron and deworming tablets ($p<0.001$), and engaging in physical activity ($p<0.001$).

Conclusions

Implementation of school health nurse program has positive impact on basic school health program in schools. Students' knowledge and practice regarding school health services found higher in SHNP-implemented schools than in SHNP-non-implemented schools. Thus, study suggest that the basic school health program's implementation in schools is influenced by the school health nurse program.

Keywords: basic school health services; knowledge and practice; Nepal; school health nurse program.

Correspondence: Jiwan Kumar Poudyal, Department of Public Health, Shree Medical and Technical College, Bharatpur, Chitwan, Nepal. Email: jiwanp@gmail.com. Phone: +977-9846633072.

INTRODUCTION

School-based health programs have the potential to be an effective way to reduce risks in a large vulnerable population, particularly schoolchildren. Globally, the prevalence of health-risk behaviors is increasingly determining children's and adolescents'healthstatus[1]anditisanindicator of health status of population of a country.[2] Several health problems that develop early in a student's life that can be prevented and treated if detected earlier which has the positive impact on development and class attendance.[3] Schools and family are the primary organization to enable school children to fulfill their roles as healthy citizens.[4-5] The School Health Program is a coordinated activities that contribute to the understanding, maintenance, and improvement of the school population's health[6], where nurse plays an important role[7] for promotes students health and academic success.[9,9] "One Nurse in Every School" program was launched by government of Nepal (GoN) in fiscal year 2018/19, Bagmati province focused for promotion of school community health through school health nurse since F/Y 2019/20 to promote the school community health[10,11] and Ministry of Health and Population (MoHP) have been implementing school based health intervention programs as well.[12] School health programs are easier and more effective to establish healthy behaviors of students and implementing significantly around the globe[13] and addressing the goals of school health services.[14] Nurse plays the crucial role for the implementation of school health program[15], supports the comprehensive services.[17,18] Evidence gap remains one of the major concern of student's perception about basic school health program especiallylow and middle-income countries and have not been adequately studied.[18-21]

METHODS

An analytical cross-sectional study was carried out among the students of two school nurse implemented and two non-implemented government schools of Bharatpur Metropolitan city, Chitwan, Nepal from April to August, 2022. The sample size of this study was 313 (184 from SHNP implemented and 129 from SHNP non-implemented schools). Students from selected schools were enrolled in one section of each class (class eight and nine). Non probability sampling technique was used for data collection.Ethical approval was taken from Shree Medical and Technical College Institutional Review Committee (Ref: SMTC-IRC-20220215-79) and informed written consent was taken from all the students before data collection. The data were checked for completeness and recoded for analysis in SPSS version 20.0 and analyzed using a descriptive and inferential statistics at 95 percent confidence level. The characteristics were stated significant at the chi-square and t-tests at $p<0.05$.

RESULTS

Higher number students were from School Health Nurse Program (SHNP) implemented schools (82.1%) and non-implemented schools (88.4%) within the

age of >14 years and the mean age among SHNP implemented school student was 14.49 SD and non-implemented school was 14.40. About three-fifth of students were male, fallowed Hinduism (75.5%), Brahmin/Chetteri (44.6%), nuclear family (58.7%), and agriculture as family main income source (35%) in SHNP implemented schoolsand in SHNP non-implemented school, majority (56.5%)of students were male, fallowed Hinduism (84.5%), Brahmin/ Chetteri (42.6%),nuclear family (58.9%), and agriculture (54.3%) was the main source of family income (Table 1).

In terms of SHNP implemented school, majority of students heard about school health program from academic curriculum (58.7%), health education as a school health program components (76.4%), school health program reduces the morbidity and mortality from diseases (72%), school health program reduces the health risk factors

Table 1. Socio-Demographic Characteristics (n=313).

Variables	SHNP implemented Schools (n=184)	SHNP non-implemented Schools (n=129)
Age (Years)	**n(%)**	**n(%)**
≤ 14	33 (17.9)	15 (11.6)
> 14	151 (82.1)	114 (88.4)
Mean±SD	14.49 ±1.116	14.40± **0.931**
Gender		
Male	104 (56.5)	54 (41.9)
Female	80 (43.5)	75 (58.1)
Religion		
Hindu	139 (75.5)	109 (84.5)
Non-Hindu	45 (24.5)	20 (15.5)
Ethnicity		
Brahmin/Chettri	82 (44.6)	55 (42.6)
Janajati	70 (38)	46 (35.7)
Others (Muslim, Christian)	32 (17.4)	28 (21.7)
Family type		
Nuclear family	108 (58.7)	76 (58.9)
Joint family	76 (41.3)	53 (41.1)
Main source of family income		
Agriculture	72 (39.1)	70 (54.3)
Service	17 (9.2)	5 (3.9)
Labor	12 (6.5)	9 (7.0)
Business	49 (26.6)	18 (14.0)
Foreign employment	34 (18.5)	27 (20.9)

(54.9%),and reduces burden for health finance (46.7%), health awareness as benefits of school health program (81%), clean environment as an essential component of for healthful school environment(70.9%), and first aid management as a role of school health nurse (78.3%), whereas, to increase physical, mental and social health of the

Table 2. Knowledge on basic school health service (n=313).

Variables	SHNP implemented School (n=184)	SHNP non-implemented School (n=129)
Sources of information*	**n(%)**	**n(%)**
Social media	32 (17.4)	47 (36.7)
Mass media	13 (7.1)	10 (7.8)
Health worker	79 (42.9)	0 (0)
Academic curriculum	108 (58.7)	73 (57)
Component*		
School health service	69 (37.9)	23 (18)
Healthful school environment	54 (29.7)	40 (31.3)
Health education	139 (76.4)	85 (66.4)
School nutrition services	77 (42.3)	35 (27.3)
School and community relationship	71 (39)	30 (23.4)
Sports and extra-curricular activities	63 (34.6)	34 (26.6)
School health service reduces*		
Health risk factor	100 (54.9)	53 (42.1)
Burden for health finance	85 (46.7)	50 (39.7)
Morbidity and mortality of disease	131 (72)	57 (45.2)
Benefits of School Health Nurse Program*		
Prevention of disease	80 (43.5)	43 (34.4)
Promotion of positive health	82 (44.6)	29 (23.2)
Early diagnosis and treatment	65 (35.3)	21 (16.8)
Health awareness	149 (81)	70 (56)
Components of healthful school environment *		
Safe drinking water	117 (64.3)	51 (39.5)
Adequate toilet facilities	99 (54.4)	30 (23.3)
Clean school environment	129 (70.9)	69 (53.3)
Roles of school health Nurse *		
Disease prevention	100 (54.3)	35 (27.1)
Health counselling	109 (59.2)	37 (28.7)
Health promotion	116 (63.3)	14 (10.9)
Health education	117 (63.6)	88 (68.2)
First aid management	144 (78.3)	35 (27.1)

Important of health education *		
To increase KAP on positive health	113 (61.4)	35 (28.7)
To increase physical, mental and social health of the student	134 (72.8)	76 (62.3)
Healthful school environment	63 (34.2)	37 (30.3)
Necessary to maintain personal Hygiene		
Yes	141 (76.4)	82 (63.6)
No	43 (23.4)	47 (36.4)
Disease prevention by personnel Hygiene		
Yes	156 (84.8)	80 (62)
No	28 (15.2)	49 (38)

** Multiple responses*

Table 3. Practice of basic school health program (n=313).

Characteristics	**SHNP implemented Schools (n=184)**	**SHNP non-implemented Schools (n=129)**
First action while experiencing health problem	**n(%)**	**n(%)**
Consult with school nurse	184 (100)	-
Consult with teacher	-	85 (65.9)
Return back to home	-	44 (34.1)
Comfortable feel during consultation		
Yes	165 (89.7)	45 (34.9)
Availability of first aid and emergency Care		
Yes	184 (100)	55 (42.6)
Conduction of screening program		
Yes	184 (100)	-
No	0 (0)	129 (100)
Iron tablet distribution for girls	(n= 82)	(n=75)
Yes	48 (58.5)	-
No	34 (41.5)	75 (100)
Free sanitary pad distribution for girls	(n= 82)	(n=75)
Yes	82 (100)	75 (100)
Distribution of De-worming tablet		
Yes	98 (53.3)	0 (0)
No	86 (46.7)	129 (100)
Periodical health education classes		
Yes	184 (100)	76 (58.9)
No	-	53 (41.1)

student as a importance of health education (72.8%) (Table 2).

All of students from SHNP implemented school consult with school health nurse but only 66% consult with their teacher and rest of them back to home in SHNP non-implemented schools while experiencing any health problem in school. Most (89.7%) students from SHN Pimplemented school felt comfortable while dealing with health problem with school health nurse but more than three-fifth of students from SHNP non-implemented school felt uncomfortable for sharing health problem with teacher. All of school students having SHNP respond that the periodical health education classes held on regular basis but about two-fifth of students from school not having SHNP respond as there is not such type of activities (Table 3).

Using an observational check list, two of the four schools had a school health nurse. First aid box was available in all schools butonly SHNP-implemented schools had access to essential medicines,equipment's and health clinic. Meanwhile, none of the SHNP non-implemented schools kept health records and referral records, but both SHNP implemented schools kept health and referral records when students were referred to a health facility. All schools had separate toilets for boys and girls, but waste bins were not available in toilets and classrooms in SHNP non-implemented schools. All of the schools had access to safe drinking water, as well as water in the toilets and soap for hand

Table 4. Observation of components of school health program (n=313).

Variables	**Schools having SHNP**	**Schools not having SHNP**
Availability school health nurse	Yes	No
Available treatment facilities		
First aid box	Yes	Yes
Essential medicine and equipment's	Yes	No
Health clinic	Yes	No
Recording and reporting		
Health records	Yes	No
Referral records	Yes	No
Water, sanitation and hygiene		
Gender differentiated toilets	Yes	Yes
Waste bin availability in toilets	Yes	No
Waste bin availability in classroom	Yes	No
Availability of safe drinking water	Yes	Yes
Availability of soap for hand wash	Yes	Yes
Water availability in toilets	Yes	Yes
Free sanitary pad availability	Yes	Yes

Table 5. Association of level of knowledge and mean knowledge score on basic school health service between SHNP implemented and non-implemented schools (n=313).

Level of knowledge	**SHNP implemented Schools**	**SHNP non-implemented schools**	**χ2 value**	**P - Value**
Poor knowledge	58(32.8%)	119(67.2%)	113.813	0.001*
Good knowledge	126(92.6%)	10(7.4%)		
Mean ±SD (Knowledge score)	16.47±3.467	11.04±2.406	**Mean difference**	
			5.434	0.001*

Table 6. Association of practice of basic school health program with SHNP implemented and no-implemented schools (n=313).

Variables	**SHNP implemented Schools n(%)**	**SHNP non-implemented Schools n (%)**	**p-value**
First consultation while experiencing any health problem			
Consult with school nurse	184(100%)	0(0%)	
Consult with teacher	0(0%)	85(100%)	0.001*
Return back to home	0(0%)	44(100%)	
Comfortable feelduring consultation			
Yes	165(66.3%)	84(33.7%)	0.001*
No	19(29.7%)	45(70.3%)	
Availability of first aid and emergency care			
Yes	184(77%)	55(23%)	0.001**
No	0(0%)	74(100%)	
Conduction of screening program			
Yes	184(100%)	0(0%)	0.001**
No	0(0%)	129(100%)	
Free iron tablet distribution			
Yes	48(100%)	0(0%)	0.001**
No	34(31.2%)	75(68.8%)	
Deworming tablet distribution			
Yes	98(100%)	0(0%)	0.001**
No	86(40%)	129(60%)	
Participation in physical activities			
Do not participate in physical activities	36(36.7%)	62(63.3%)	
Athletics/sports	113(69.8%)	49(30.2%)	0.001*
Dance class	19(70.4%)	8(29.6%)	
Others activities	16(61.5%)	10(38.5%)	

washing. All schools provided free sanitary pads to female students (Table 4).

There is a statistically significant relationship between knowledge level and SHNP implemented versus non-implemented schools ($p<0.001$). The mean knowledge score for the students from SHNP implemented school was 16.47 and non-implemented school was 11.04 with 5.434 mean difference. The mean knowledge score was statistically significant association between SHNP implemented and non-implemented schools ($t_{310.975}=16.370$, $p<0.001$; 95% CI=4.781 & 6.087) (Table 5).

School health nurse program implemented and non-implemented schools were statistically significant association with the components of practice of basic school health programs i;e first consultation while experiencing health problem ($p<0.001$), comfortable feel during consultation ($p<0.001$), availability of first aid and emergency care ($p<0.001$), conduction of screening program ($p<0.001$), free distribution of iron and deworming tablets ($p<0.001$), and participation of physical activities ($p<0.001$) (Table 6).

DISCUSSION

Schools are critical for young people to develop the skills for self-regulation, resilience, and critical thinking skills that will lay the groundwork for a healthy future and its outcomes have been linked to increased access to education and safe and supportive school environments. School health service (SHS) is the guidance that a health worker provides to students and staff enrolled in schools.[21]

This study found that the good knowledge (92.6%) among students belongs to SHNP implemented schools and poor (67.2%)in not having SHNP. Almost of the students from school having SHNP had good knowledge about the School Health Program especially as it relates to its components, benefits and roles. The finding was supported by a study conducted in Ogun State, Nigeria.[6] Level of knowledge of respondents was statistically associated with school health nurse implemented and non-implemented schools ($p<0.01$) as there was higher level of knowledge those respondents who were from school health nurse implemented schools and the mean knowledge score was quite differences of the SHNP implemented (16.47, SD 3.467) and non-implemented (11.04, SD 2.406) schools. This finding was contradicts the study in Nepal.[22] It was also found that the nurse was available in SHNP implemented schools and there were no any even a health professional found in remaining schools.This study contradicts by a study as there were verities of health professionals i.e. Nurse/ Midwife/Paramedics were available in 31.7% of schools and 15.0% in public and private schools respectively[6] while another study found that more than half of schools had no any health professionals[14] and more than four-fifth of schools did not have school health nurse.[4] It was also found that, separate health clinics were available in halfof the study setting. This study findings also supports a study on school health service as only 40% of government and60% of private schools had sick room[2], while 30.2% of the schools had a health room or dispensary.[14]However, this finding

contradicts by another study conducted in India, there are no availability of separate health room or clinician school.[23] The study also found that all of schools had first aid box.A study conducted in India contradict the present study as 69% of rural and 93% of urban government schools had first aid box[23] while 88.7% of schools had availability of first aid boxes.[14] Whereas only schools with SHNP kept student and staff health records, another study found that 87% of urban schools kept health records.[23] According to the current study, schools with SHNP were conducting vision screening programs, whereas schools without SHNP were not. A study found that many more health services and routine screening programs on common morbidities such as nutritional deficiencies, dental, visual and hearing problems, respiratory infections, and skin problems were being conducted in urban schools.[23] Another study found that in the absence of a screening program, there was strong evidence of a variety of health problems interfering with learning.[3] According to present study, waste bins were not available in toilets and class rooms in schools with SHNP while 75% of schools had availability of soap for hand washing, which contradicts the Nigerian study as 50% of schools had dust bins and waste paper baskets and only 29% of schools had soaps for hand washing[6], while almost urban and 69% of rural schools had facility for hand washing.[23] This study also found that practice of basic School health program was statistically significant ($p<0.001$) on the consultation with school health nurse, comfortable feel while dealing with health problem, provision of first aid and emergency care, conduction of screening program, free distribution of iron deworming tablet, and participation in physical activities in schools. These findings were supported by the study project of Nepalwhere almost school health services were significant association with schools with the SHN project and without project. [22]

CONCLUSIONS

It is concluded that, students' knowledge and practice regarding school health services were found to be higher in SHNP implemented school as compared to SHNP non-implemented school. There was a higher mean score knowledge level among students of school health nurse implemented schools regarding basic school health services and these services were available in almost school health nurse program implemented schools. Therefore, school health nurse can play a crucial role in implementing health promotion and disease preventionactivities through school health services in school setting.

Conflict of Interest: None.

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