Original Research Article

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20205722

Status of knowledge regarding school health services among school teachers: a cross sectional study from a northern Indian state

Aniruddh Ranga*, J. P. Majra

Department of Community Medicine, BPS GMC (W) Khanpur Kalan, Sonipat, Haryana, India

Received: 19 October 2020 Revised: 10 December 2020 Accepted: 17 December 2020

*Correspondence:

Dr. Aniruddh Ranga,

E-mail: dr.aniruddhranga@gmail.com

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ABSTRACT

Background: School-age children spend one-third of their time in schools. Teachers are key personnel to look after the health of school children. Teachers can provide health education to school children, assess the school environment for better health outcomes, provide health care services and help in the maintenance of school health records. Aim of the study was to assess the status of knowledge of school health services (SHS) among school teachers.

Methods: Government and private schools in a Northern Indian state. A community-based cross-sectional study. It includes 50 randomly selected designated schoolteachers for SHS by the PPS methods from the schools which were functional since at least five years in the study area. A pre-tested self-administered questionnaire was used to assess the knowledge regarding SHS. Percentage, proportion and χ2 test were used as statistical methods. The p-value 0.05 was considered statistically significant.

Results: 38% participants were of 41-50 years of age group, 54% were females and 48% had an experience of \leq 10 years. 22% participants had training regarding SHS. 40% participants had moderately adequate knowledge (pvalue=0.04). It was observed to be more among participants of rural, government, age group of 31-40 years, with experience of 21-30 years, female and among trained teachers for school health.

Conclusions: School teachers were lacking in knowledge regarding environment and sanitation; communicable and non-communicable diseases; and health education for school children. We also observed that training regarding SHS was a majorly missing component which could be the reason behind poor level knowledge among schoolteachers.

Keywords: School health, School health services, Teachers knowledge, India

INTRODUCTION

Over 2.3 billion school-age children spend one-third of their time in schools. For many school-age children schools are the first and the most accessible point of contact with health services.1

Health-promoting school focus on: caring for oneself and others, making healthy decisions and taking control over life's circumstances. Thus creating conditions that are conducive to health, building capacities for preventing death, disease and disability caused by helminths, tobacco use, HIV/AIDS/STDs, sedentary lifestyle, drugs and alcohol, violence and injuries, unhealthy nutrition and health-related behaviours.²

In 2016, leading causes of adolescent girls' deaths were maternal conditions, self-harm and road injury, while other major causes include HIV/AIDS, road injury, lower respiratory infections, malaria and diarrhoeal diseases. A quarter of all deaths in male adolescents aged 15-19 years were due to road injury while HIV/AIDS, road injury, lower respiratory infections, malaria, drowning and diarrhoeal diseases caused many deaths.³

Teachers are the key personnel in schools to look after the health of school children, as they are a rich local resource, Teachers are the key personnel in schools to look after the health of school children, as they are a rich local resource, acceptable personnel to the students as well as to the community and other local agencies like NGOs.

If they are equipped with proper knowledge regarding school health, it will help in developing and maintaining his or her own health as well as of the students. Teachers can provide health education to school children, assess the school environment for better health outcomes, provide health care services and help in the maintenance of student health records.⁴

Schools have a responsibility to educate their students and foster among them healthy and hygienic behaviour. Students should be educated on the health risks they face at school and how to protect themselves and others against diseases and other forms of ill-health by adopting health-promoting and health risking habits and practices. But according to the studies, school teachers are ill-equipped with adequate knowledge regarding school health and without adequate knowledge, it is impossible to take care of the health promotion of students.⁵⁻⁷

As per available literature, there is a scarcity of data regarding the knowledge among school teachers regarding school health services. So this study was conducted to assess the status of knowledge of school health services among designated school teachers.

METHODS

This community-based cross-sectional study was carried out from June 2018 to June 2020 in the department of Community Medicine, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonepat district, Haryana. This study was done among designated schoolteachers for school health in both government and private schools of Haryana, a northern state of India.

Sample size

This was a part of a larger study. The sample size was calculated using Cochran's formula, taking prevalence of the adequate environmental and sanitary conditions in the previous study8 50% at 95% CI and 15% permissible error, the sample size obtained was $\approx 50.$

One designated schoolteacher for school health from each sampled school was included in this study to form a sample size of 50 schoolteachers.

Sampling technique

Three-stage random sampling technique using PPS (Probability Proportional to Size) was adopted for the present study. In stage I one district that is. Sonipat, was

selected randomly from a list of 22 district of Haryana a northern state of India.

Two educational blocks were selected using simple random sampling in Stage II. After which 19 government and 31 private schools were selected from the sampled educational blocks by PPS in stage III. One schoolteacher designated for school health was included from each sampled school.

Inclusions criteria

It comprises designated schoolteachers for school health from schools located in the district Sonepat, Haryana which were functional in the last five years and granted permission for the study.

Exclusions criteria

Schools that were shut down/ non-functional, primary schools and teachers not involved in school health services were excluded.

Study tools and data management

The data were collected using a pretested, structured self-administered questionnaire from one schoolteacher of each sampled school. The tool was prepared to collect the data including gender, age, experience of teaching, training status and level of knowledge for school health among designated school teachers. The knowledge was tested by asking multiple-choice questions on various aspects of school health which includes environmental and sanitary conditions in the school, hygiene of students, communicable diseases, non-communicable diseases and health education at school.

A pilot study was conducted among ten school teachers who were not included in the final sample size. Collected data were entered in Microsoft excel version 2019, coding and tabulation was done. The level of teacher's knowledge regarding school health was graded as adequate $(\geq 75\%)$, moderately adequate $(\leq 50.74.9\%)$ and inadequate $(\leq 50\%)$.

Ethical consideration

An informed written consent was obtained from each participant. It was told that participation in this study was voluntary and they can withdraw from the study at any time in between and there won't be any administrative consequences to them. To maintain the anonymity, codes were given to the schoolteachers.

Statistical analysis

Percentage and proportion were calculated for qualitative data. A χ^2 test was used for the categorical variable. SPSS software was used for statistical analyses. The p-value <0.05 was considered statistically significan.

RESULTS

We observed that 19 (38%) participants were from government and 31 (62%) were from private schools. Twenty nine (58%) participants were from rural schools and 21 (42%) participants were from urban schools. In the age distribution, 19 (38%) participants were lying in the age group of 41-50 years, 18 (36%) participants were in the age group of 31-40 years, eight (16%) of the participants were in the age group of 25-30 years and 10% of the participants were of more than 50 years.

We observed that mean age of the participants was 41.64±10.3 years, which was observed to be 43.58±6.94 years among participants from government school and 36.45±10.89 years among participants of private schools. Largest proportion (63.1%) of participants in government school were above the age of 40 years. While among private school majority of the participants (61.3%) were below the 40 years of age. Among all participants, 46% were male participants while 54% were male.

Among all, 48% of participants were having less than ten years of experience, 34% were having experience between 11-20 years, 16% of participants were having experience between 21-30 years and only 2% of participants had more than 31 years of experience. We found that mean years of experience was 12.92±7.9 years which was 13.26±6.6 years among participants of government schools and 12.71±8.69 years among participants of private schools. 22% of participants had training regarding school health services while the rest didn't (Table 1).

The knowledge of designated school teachers regarding school health services was tested in the schools of the study area. We observed that only 11 (22%) participants answered correctly regarding the adequate ratio of students per class in schools, five (10%) participants for the number of students per latrine/toilet ratio, 14 (28%) participants for adequate lighting of a room in the school. Only one (2%) participant responded correctly about adequate classroom furniture, nine (18%) participants had knowledge about factors included in a school environment and sanitation, 43 (86%) participants answered correctly about disease due to mosquitoes, 15 (30%) participants answered correctly the full form of WASH.

29 (58%) participants answered correctly about the guidelines on handwashing, 27 (54%) participants answered correctly about the types of sanitary disposal, 34 (68%) participants answered correctly about the disposal method for sanitary pads in school, 35 (70%) participants answered correctly about the diseases which can be prevented by proper sanitation, 24 (48%) participants answered correctly regarding communicable diseases related to impure water. 14 (28%) participants answered correctly about the responsibilities of teachers regarding health check-up of students, 32 (64%) participants answered correctly about the health education topics for school level (Table 2). It was observed that, regrading school health 40% of participants had moderately adequate knowledge. It was observed to be more among participants of government schools (57.9%) than private schools (29%), while 60% of participants had inadequate knowledge which was 42.1% among government and 71% among participants of private schools (p=0.04) (Table 3).

Table 1: Demographic profile of school teachers designated for school health under the study area.

Attributes		Government (n=19)	Private (n=31)	Total (n=50)
		N (%)	N (%)	N (%)
Area of schools	Rural	13 (68.4)	16 (51.6)	29 (58)
At ca of schools	Urban	6 (31.6)	15 (48.4)	21 (42)
Age (in completed years)	≤30	1 (5.3)	7 (22.6)	8 (16)
	31-40	6 (31.6)	12 (38.7)	18 (36)
	41-50	10 (52.6)	9 (29)	19 (38)
	>50	2 (10.5)	3 (9.7)	5 (10)
	Mean	43.58±6.94	36.54±10.89	41.64±10.32
Gender	Male	6 (31.6)	20 (64.5)	23 (46)
	Female	13 (68.4)	11 (35.5)	27 (54)
Experience (in years)	≤10	9 (47.4)	15 (48.4)	24 (48)
	11-20	6 (31.6)	11 (35.5)	17 (34)
	21- 30	4 (21)	4 (12.9)	8 (16)
	≥31	0 (0)	1 (3.2)	1 (2)
	Mean	13.26±6.64	12.71±8.69	12.92±7.91
Training	Yes	1 (5.3)	10 (32.2)	11 (22)
	No	18 (94.7)	21 (67.8)	39 (78)

Table 2: Distribution of school teachers designated for school health based on their knowledge of school health.

	Correct responses			
Questions	Government n=19	Private n=31	Total n=50	
	N (%)	N (%)	N (%)	
What is the adequate ratio of students per class?	3 (15.8)	8 (25.8)	11 (22)	
What is the standard number of students per latrine/toilets ratio?	4 (21)	1 (3.2)	5 (10)	
What is adequate light in the classroom?	6 (31.6)	8 (25.8)	14 (28)	
What is adequate classroom furniture?	1 (5.3)	0 (0)	1 (2)	
Which factors are not included in the school environment and sanitation?	2 (10.5)	7 (22.6)	9 (18)	
Diseases due to mosquitoes?	16 (84.2)	27 (87)	43 (86)	
Full form of WASH?	7 (36.8)	8 (25.8)	15 (30)	
Guidelines on handwashing?	15 (78.9)	14 (45.2)	29 (58)	
A type of sanitary disposal method?	12 (63.1)	15 (48.4)	27 (54)	
What is the disposal method of the sanitary pad in school?	16 (84.2)	18 (58)	34 (68)	
Which disease can be prevented by proper sanitation?	14 (73.7)	21 (67.7)	35 (70)	
Which is not a communicable disease related to impure water?	11 (57.9)	13 (41.9)	24 (48)	
Job responsibilities of teachers in regards to health check-up of students doesn't include?	8 (42.1)	6 (19.4)	14 (28)	
Which is not a health education topic at the school level?	14 (73.7)	18 (58)	32 (64)	

Table 3: Distribution of school teachers based on the level of knowledge regarding school health.

Level of knowledge	Government n=19 N (%)	Private n=31 (%) N (%)	Total n=50 (%) N (%)	P value
Adequate	0 (0)	0 (0)	0 (0)	
Moderately adequate	11 (57.9)	9 (29)	20 (40)	0.04
Inadequate	8 (42.1)	22 (71)	30 (60)	

Table 4: Determinants of level of knowledge regarding school health among designated school teachers under the study area.

		Mod. adequate	Inadequate	Total	
Attributes		n=20	n=30	n=50	P value
		N (%)	N (%)	N (%)	
Area of Schools	Rural	12 (41.4)	17 (58.6)	29 (58)	0.82
	Urban	8 (38)	13 (62)	21 (42)	
Ownership of Schools	Government	11 (57.9)	8 (42.1)	19 (38)	0.04
	Private	9 (29)	22 (71)	31 (62)	
Age (in years)	25-30	3 (37.5)	5 (62.5)	8 (16)	0.94
	31-40	8 (44.4)	10 (55.6)	18 (36)	
	41-50	7 (36.8)	12 (63.2)	19 (38)	
	>50	2 (40)	3 (60)	5 (10)	
Gender	Male	9 (39.1)	14 (60.9)	23 (46)	0.91
	Female	11 (40.7)	16 (59.3)	27 (54)	
Experience (in years)	≤10	9 (37.5)	15 (62.5)	24 (48)	0.46
	20-Nov	6 (35.3)	11 (64.7)	17 (34)	
	21- 30	5 (62.5)	3 (37.5)	8 (16)	
	≥31	0 (0)	1 (100)	1 (2)	
Training	Yes	6 (54.5)	5 (45.5)	11 (22)	0.26
	No	14 (35.9)	25 (64.1)	39 (58)	

Level of moderately adequate knowledge was observed to be more among participants of rural schools as compared to the urban schools (p=0.82), among participants of government schools as compared to the participants of private schools. (p=0.04), among participants of the age group of 41-50 years. (p=0.94), among participants with experience of 21-30 years (p value=0.46), among females as compared to the males (p value=0.91) and among trained participants as compared to untrained participants for school health (p=0.26) (Table 4).

DISCUSSION

This study was conducted to know the status of knowledge regarding school health services among schoolteachers in schools of a northern Indian state. As far as ownership was concerned the proportion of private school was higher in the study area so we observed that majority of the participants were from private schools (62%), while Abubakar AU9 has found that the majority of the participants (67.8%) were from government schools.

As the proportion of schools located in rural area was more in the study area, we observed that majority of the participants were from rural schools (58%), similarly a study by Htun et al found that most of the teachers were from rural schools (69.1%).⁵ A higher proportion of private schools were observed to be more in a rural area, may be because of cheaper land in areas located outside the municipality limit. In our study, female participants (54%) outnumbered the male participants (38%). A similar trend but a higher proportion of females teachers was observed by Htun et al (91.8%), and Saadia et al (69.3%) that most of the participants in that study were females.⁵ Contrarily Abubakar et al has reported that the majority of the participants were males (79.3%) in his study area.^{9,10}

We observed that mean age of participants was 41.64 ± 10.3 years. It was 43.58 ± 6.94 years among participants from government school and 36.45 ± 10.89 years among participants of private schools. Majority of the participants (38%) were in the age group of 41-50 years (52.6% from government and 29% from private). A study by Gowri et al found that most of them (43.8%) were in the age group of 31-40 years and Saadia et al (45.5%) and Abubakar AU9 (37.9%) has found that the majority of the participants were of the age group of 30-39 years. 6,10

We found that mean years of experience was 12.92±7.9 years which was 13.26±6.6 years among participants of government schools and 12.71±8.69 years among participants of private schools. Majority (48%) of the participants were having less than ten years of experience. A higher proportion was observed by Gowri et al (85.3%) and Saadia et al (59.2%) that majority of the teachers were having less than ten years of experience. Abubakar AU has found that the majority of the participants (36.4%) were having experience of 10-19 years. 6.10

We observed that the proportion of younger teachers i.e. less than 40-year age, was more among private schools as compare to participants of government schools. But length of experience was almost same in both government and private schools which showed that people initially served in private schools and later when they got opportunity, they joined the government schools. This also points that job opportunity in government schools is shrinking for younger generations.

We observed that 22% of participants had training regarding components of school health, which was more than (7.6%) that reported by Chavan et al. 11 A lower level of training has clearly been reflecting in knowledge status of schoolteachers regarding various aspect of school health services. Regarding the adequate ratio of students per class in schools, only 11 (22%) participants answered correctly, five (10%) participants answered correctly for the number of students per latrine/toilet ratio, 14 (28%) participants answered correctly for adequate lighting of a room in the school.

Only one (2%) participant responded correctly about adequate classroom furniture, 27 (54%) participants answered correctly about the types of sanitary disposal, 34 (68%) participants answered correctly about the disposal method for sanitary pads in school, nine (18%) participants had knowledge about factors included in a school environment and sanitation, while a higher proportion was observed by Saadia et al, that 66% participants had knowledge for sanitation and 31.8% had knowledge for a supportive environment.¹⁰

We observed that 43 (86)% participants answered correctly about disease due to mosquitoes, 15 (30%) participants answered correctly the full form of WASH, 29 (58%) participants answered correctly about the guidelines on handwashing, 35 (70%) participants answered correctly about the diseases which can be prevented by proper sanitation, 24 (48%) participants answered correctly regarding communicable diseases related to impure water, 14 (28%) participants answered correctly about the responsibilities of teachers regarding health check-up of students.

A study by Saadia et al has found that 74.1 participants had knowledge regarding the periodic medical examination of students. We observed that 32 (64%) participants answered correctly about the health education topics for the school level. Saadia et al has found that 35.8% of participants had knowledge regarding health issues affecting the school community. ¹⁰

On summing up the various aspect of knowledge on school health services we concluded that none of the participants had adequate knowledge ($\Box 75\%$ score), 40% of participants had moderately adequate knowledge (50-74.9% score) which was 57.9% among participants of government schools and 29% among participants of private schools.

While 60% of participants had inadequate knowledge (<50% score) which 42.1% among participants of government schools and 71% among participants of private schools. (p-value=0.04). A study by Adebayo et al found that 84.6% of teachers were having inadequate knowledge regarding school health services which was similar in participants of rural and urban schools. 12 A study conducted by Odeyemi et al has revealed that 55.7% of participants had a poor level of knowledge regarding school health. 13 The findings of the present study are better than the findings of Gowri et al where 78% of school teachers did not have adequate knowledge, 22% had moderately adequate knowledge and none of the teachers had adequate knowledge regarding the health care of school children.⁶ Abubakar et al has found that only 8% of participants were having a good level of knowledge. 9 This highlights the inadequacy of training regarding school health service among schoolteachers.

We observed that level of moderately adequate knowledge was observed to be higher among 44.4% of participants of the age group of 31-40 years. (p-value=0.94), 62.5% participants with experience of 21-30 years of age (p-value=0.46), 40.7% females participants as compared to the males (p-value=0.91), 41.4% participants from rural schools as compared to the urban schools (p-value=0.82).

The difference observed among participants of government schools as compared to the private schools was observed to be statistical significant. (p-value=0.04). Gowri et al has found that there was a statistically significant association between the school teacher's knowledge with the education and year of teaching experience and there was no statistically significant association between teacher's knowledge with the age and sex of the participants.⁶

A study by Htun et al found that being teachers from urban areas, over 50 years of age, with service duration of 20- 24 years, are found to be statistically significantly associated with higher levels of knowledge.⁵ Without adequate knowledge, we can't expect the schoolteachers to provide a quality health service at schools. This study was conducted among school teachers designated to provide school health services represents a good sample of schools which includes government and private schools in their proportion. Study has also included schools from both rural and urban areas.

Study has not reported any statistically significant difference among teacher strained for School Health Services and the untrained teachers. This strongly points towards the inadequacy and ineffectiveness of the training if any provided to the teachers designated for the School Health Services in the study area.

CONCLUSION

"What the mind doesn't know, eyes do not see". Knowledge of school health services is a prerequisite for providing school health services by the designated schoolteachers but the problem of inadequacy of knowledge for school health services was widespread. If schoolteachers won't see any problem, it will remain unaddressed and thus adversely affects the school children's health.

Recommendations

It is recommended that the government should make school health training a part of teachers' educational curriculum. And equipped with desired level of knowledge and skills. This may go long way in approving health of the school children in particular and in the community at large.

ACKNOWLEDGEMENTS

Authors would like to thank ICMR for providing the financial assistance, to District Education Officer, Sonepat, all the school teachers and Dr. Nidhi for their support in the study.

Funding: Financial assistance was provided by ICMR vide letter no. 3/2/July-2019/PG-Thesis-HRD (25) dated: 30th July 2019.

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- 1. WHO School health services. Available at https://www.who.int/ maternal _child_ adolescent/adolescence/school-health-services/en/. Accessed on 10 August 2020.
- 2. WHO What is a Health promoting School? Available at https:// www. who.int/ health- promoting schools/overview/en/ Accessed on 4 October 2020.
- 3. WHO Causes of death among adolescents. Available at https://www.who.int/maternal_child_adolescent/data/causes-death-adolescents/en/. Accessed on 4 October 2020.
- 4. Rayanna D. School Health. J Sch Health. 1933;3:5-6.
- Htun YM, Lwin KT, Oo NN, Soe K, Sein TT. Knowledge, attitude and reported practice of primary school teachers on specified school health activities in Danuphyu Township, Ayeyarwaddy Region, Myanmar. South East Asia J Public Heal. 2014;3:24-9
- 6. Gowri M, Siriya S. Knowledge and practice of school teachers on health care of school children. Int J Pharma Bio Sci. 2017;8:65-9.
- 7. Adebayo AM, Makinde GI, Omode PK. Teachers' training and involvement in school health programme in Oyo State, Southwest Nigeria. Arch Basic Appl Med. 2018;6:9-15.
- 8. Majra J, Gur A. School environment and sanitation in rural India. J Glob Infect Dis. 2010;2:109.
- 9. Abubakar AU, Awosan KJ, Ibrahim MT, Ibitoye KP. Knowledge and practice of school health program in

- primary and secondary schools in Sokoto metropolis, Nigeria. Int Arch Med Med Sci. 2009;7:87.
- 10. Saadia AG. Knowledge and view of teacher regarding school health program in two localities Khartoum, Sudan 2019. Int J Sci Basic Appl Res 2019;45:181-6.
- 11. Chavan GM, Chavan VM. Knowledge, attitude and practices of secondary school teachers regarding school health services in children. Int J Community Med Public Health 2018;5:1541.
- 12. Adebayo AM, Onadeko MO. Knowledge of school health programme among public primary school teachers in Oyo State, South-West Nigeria: a rural-

- urban comparative study. Afr J Reprod Health. 2015;19:55-60.
- 13. Odeyemi K, Chukwu E. Knowledge, attitude and practice of School health among primary school teachers in Ogun State, Nigeria. Niger J Paediatr. 2015;42:340.

Cite this article as: Ranga A, Majra JP. Status of knowledge regarding school health services among school teachers: a cross sectional study from a northern Indian state Int J Community Med Public Health 2021;8:359-65.