Knowledge and attitude of teachers and school nurses about upper respiratory tract infections among primary school students.

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Abstract

Schools are crowded places for the spread of infectious diseases among students, understanding the different spread ways of infections allows the preventive measures to be applied. The current study aimed to assess knowledge and attitudes of school teachers and nurses about upper respiratory tract infections among primary school students. Research design: A descriptive research design was used in this study. Sample: convenient sample of 234 persons who were distributed from six governmental primary schools at 3 districts in Minia governorate that were chosen by multistage random sample. Tools: A structured questionnaire that includes part one: demographic data related to studied group, part two: school teachers and nurse's knowledge related to upper respiratory tract infections and part three included their attitudes when they find a case of upper respiratory tract infections. Results: The mean age of the study sample were 39.4 ± 8.7 years, more than half (52.1%) of them their school place from urban area and 52.6 % of them had unsatisfactory level of knowledge. The majority of the study sample had positive attitudes toward actions must to do toward preventing the spread of upper respiratory tract infections. There were fair negative association between the age of teachers, years of experiences and total knowledge scores (r = -.299**, -.278** respectively). There were weak positive association between knowledge and attitudes of school teachers regarding prevention of URTI (r = .166 & .297 respectively). Recommendations: Increase the number of school nurses and provide a school nurse to every school, encourage future educational programs for school teachers, that focusing on: causes of upper respiratory tract infection, mode of transmission, sign and symptoms, understanding of the environment that affects the spread of the disease and ways of preventions.

Keywords: Attitudes, knowledge, upper respiratory tract infections.

Introduction

Schools inherently foster the transmission of infections from person to person because they are a group setting in which students are in close contact and share supplies and equipment. The spread of infection does not just stop at the school, the children pass it to their siblings, friends and family – out into the wider community as they go from place to place[1].

Infectious diseases account for millions of school days lost each year for school students in the United State in (2014) 40 ‰of children aged 5–17 years missed 3 or more school days because of illness or injury. Nearly 22 million school days are lost each year due to colds alone and 38 million school days are lost each year due to the influenza virus [2].

In Egypt according to the WHO, the number of reported cases of mumps was (20390, 7626 and 5143 cases) in 2013, 2014and 2015 respectively. In 2014 the number of reported cases of chickenpox was 1075 cases, the number of reported cases of measles was (1314 and 5432 cases) in 2014 and 2015 respectively. In 2015 number of reported cases of the seasonal influenza was 9769 cases, and German measles was 53 cases [3].

In Minia Governorate, the ministry of health and population reported that; the number of reported cases of measles was (4, 27, 175 and 18cases) respectively in 2013, 2014, 2015and 2016. Mumps cases was (1686, 175 and 59 cases) respectively in 2013, 2014 and 2015. Seasonal influenza cases was (225, 242 and283 cases) respectively in 2014, 2015and 2016. Chickenpox cases were (34 and 198 cases) respectively in 2015and 2016. And 12 cases of meningitis in 2016[4].

Teachers have a variety of responsibilities for the health of their students such as motivating them in the development of healthy habits, encouraging student's responsibility for health and observing them for signs of health problems. Also have a responsibility to model healthy behavior and provide health instruction. Other responsibility includes assisting with screening efforts and measures to control spread of disease. Teachers may counsel students with health problems and may make referral for assistance as appropriate [5].

The school nurse's responsibility in infectious disease control is to determine student at risk, students or staff with close contact, determine who will provide the required intervention, and develop strategy for early identification of additional cases and an exclusion policy. Also she should be knowledgeable about current infectious diseases regulations and control, current reportable diseases, collaborate with health care providers on limitations for the child upon return to school, promote prevention and control through health education, serving as a resource person to staff, provide health counseling to parents and guardians regarding appropriate treatment and follow-up. School nurses need to be physically present in schools to address these responsibilities appropriately. Improved student outcomes result where schools have a full-time school nurse [6].

Significance of the study

Respiratory infectious diseases aren't new disease but spreading and identified from thousand years. It can be a major cause of death among school children and affect child's schooling by causing absenteeism and delay school achievement [7] .Worldwide nearly 22 million school days are lost each year due to colds alone and 38 million due to the influenza virus [8].At Minia governorate upper respiratory tract infections are common among school children and rise in prevalence especially in winter and spring. So this study was conducted to assess the knowledge and attitudes of teachers and school nurses because they are the main responsible for the health of these pupils who haven't developed good personal habits or immunity to various diseases.

Aim of the Study

This study aimed to assess knowledge and attitudes of school teachers and school nurses about upper respiratory tract infections among primary school students.

Research questions

1- What are the knowledge and attitudes of school teachers and nurses about upper respiratory tract infections among primary school students?
2- What are the relations between knowledge and attitudes of school teachers and school nurses and the prevention of upper respiratory tract infections?

Subject and Methods

Research design:

A descriptive design was used to achieve the aims of the current study.

Setting:

The setting was chosen by Multistage Random Sample. The study was conducted in six governmental primary schools out of three districts in Minia governorate were chosen and from each district a rural and an urban primary school were selected randomly.

Sample

Convenient sample was used in this study. The total sample size was 234 teachers and school nurses.

Tools of data collection:

Tool one: It was developed by the researcher and it was a structured questionnaire which was consisted of the following parts:

- Part I: Personal and socio-demographic data: such as (age, sex, address, qualifications, etc….).
- Part II: it include knowledge of school teachers and school nurses about upper respiratory tract infections e.g. (sign and symptoms, mode of transmission, etc….).

Tool two: It includes the attitudes of school teachers and school nurses when they find a case of upper respiratory tract infections.

Scoring system:

The researcher determined 26 questions about knowledge of upper respiratory tract infections, every question equal one degree and total score equal 26 degrees. After the calculation of each person's scores the participant who had:

- ≥60 % = Satisfying knowledge.
- < 60% = Unsatisfying knowledge.

The attitudes will be measured by using Likert's scale [9]. Its questions were being recorded into, agree with a score 3, to some extent 2 disagree with score 1. The participant who had:

- 60 % and more = positive attitude.
- Less than 60% = negative attitude.

Validity

The tools were tested for content validity by three experts of academic medical and nursing staff from faculty medicine and faculty of nursing at Minia University. Modifications were done accordingly.

Reliability

The tools were designed in its final format and tested for reliability by using internal consistency using Cronbach test, the tools proved to be reliable (0.73).

Pilot study

A pilot study was conducted on 10% of the study sample in the selected setting to evaluate the applicability & clarity of the tools. No modification was done in the study tool based on the pilot study. This sample was included into study sample.

Ethical consideration:

An official letter of the study approval was obtained from the dean of the faculty of nursing at Minia University to undersecretary of the ministry of education, then to the chairman of the previously mentioned setting. A written initial approval obtained from the research ethical committee of the faculty of nursing, Minia University. An oral permission for voluntary participation was obtained from teachers and school nurses and purpose of the study was explained.

Study procedure

The researcher initially introduced herself to all participants and they were assured that the collected data would be absolutely confidential. Persons were informed that participation is voluntary. Data were collected within 3 months from February to April 2016, two days/week at official school time from 8 Am: 12 pm. The investigator met the subjects in their work place and they were interviewed at times that were convenient to them. The time spent to fill the questionnaire ranged between 15 to 20 minutes according to the needed explanation. Measures were taken to protect ethical rights of subjects.

Statistical design:

Data collected and analyzed by computer program SPSS" ver. 20" Chicago, USA. Data expressed as mean, Standard Deviation, number, and Percentage. Using t.test to determine significant for the numeric variable. Using Chi-square to determine significant for the non-parametric variable.

Results

Table (1): Distribution of the study sample according to their personal and demographical data (n= 234)

Personal and demographical Data	no.	%
1. Age / years:		
23 –	81	34.6
35 -	96	41
47 – 59	57	24.4
Mean ± SD	39.4 ± 8.7 years	
2. Sex:		
Male	56	23.9

Personal and demographical Data	no.	%
Female	178	76.1
3. School place:		
Urban	122	52.1
Rural	112	47.9
4. *Economic status of family:		
Sufficient	48	20.5
Somehow sufficient	120	51.3
Insufficient	66	28.2
5. Qualification:		
Diploma	80	34.2
University	110	47
Post graduate	44	18.8
6. Years of experience:		
1-	82	35
10-	63	26.9
20 -	69	29.5
30 – 40 yrs	20	8.6
Mean ± SD	15.9 ± 9.4 years	
7. Marital status:		
Married with children	210	89.7
Single	13	5.5
Divorce	2	.9
Widow	9	3.9
Total	234	100

*According to school teachers' view

Table (1): the above table show that distribution of socio-demographic data of teachers and school nurses, regarding to their age, the table showed that 41% of them were ranged between 35- 46 years, 76.1% of them were female, 52.1% school place in urban area and near to half (47%) of them have university qualification, regarding to the economic status of the study sample more than half (51.3%) mentioned that their economic status were somehow sufficient according to their point of view, about one third (35%) of them have experience less than 10 years. It also the vast majority of teachers' (89.7%) married with children.

Fig (1): Concerning the school teachers and school nurses opinion toward best methods of health education for primary school students

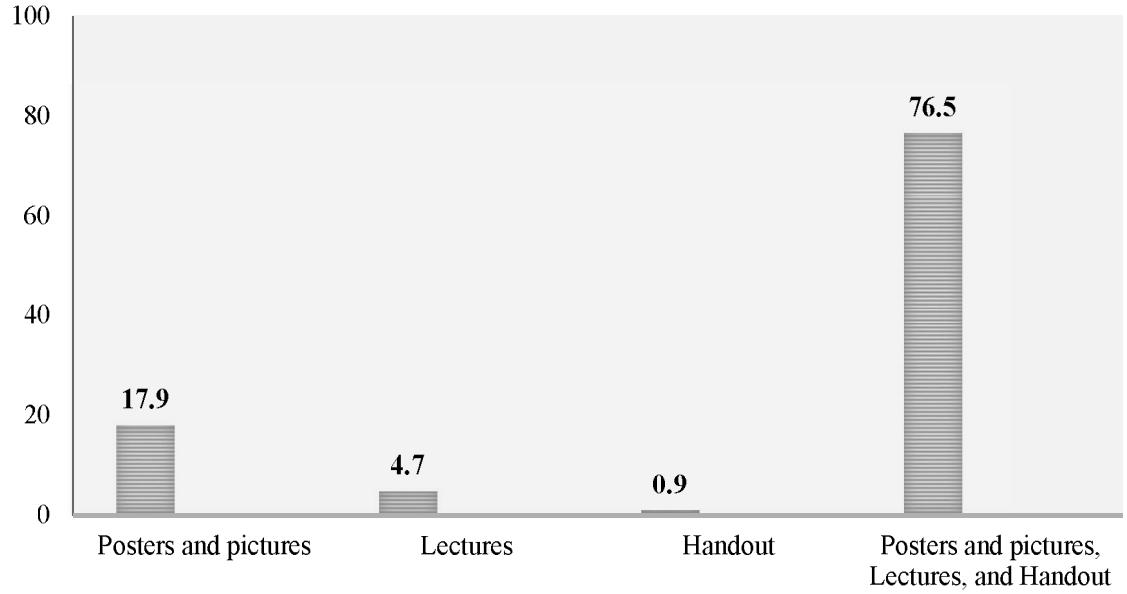

Fig. (1) Best methods of health education for primary school students (n = 234)

Figure (1): this figure highlighted that, concerning the school teachers and school nurses opinions toward best methods of health education for primary school students; third fourth (76.5%) of them said that combination between posters, pictures, lectures and handout are best methods of health education. Other sources were posters and pictures, lectures only, and handout only (17.9 %, 4.7%, & 0.9 % respectively).

Table (2): Distribution attitudes of teachers regarding upper respiratory tract infections among students (n = 231)

Items	Agree		To some extent		Disagree	
	NO.	%	NO.	%	NO.	%
Referring ill students with respiratory infections to the school nurse	208	90.1	10	4.3	13	5.7
It is important to observe students contact after the isolation of the infectious case	223	96.5	5	2.2	3	1.3
Should observe the diseased student with infectious disease when returning to school after cures	217	93.9	9	3.9	5	2.2
It is necessary to follow up the absences and ask about the cause of absence	225	97.4	0	.0	6	2.6
Must Report the members of the school after the return of the student.	207	89.6	4	1.7	20	8.7
Should guide students to follow positive health behaviors.	230	99.6	0	.0	1	.4
It is necessary to obtain health education for respiratory infectious diseases	230	99.6	0	.0	1	.4

Table (2) revealed attitudes of teachers regarding upper respiratory tract infections among students where the majority of respondents agreement were in referring of ill students with respiratory infections to the school nurse, it's important to observe students contact after the isolation of the infectious case, should observe the diseased student with infectious disease when returning to school after cure, it's necessary to follow up the absences and ask about the cause of absence, must report the members of the school after the return of the student, should guide students to follow positive health behaviors, and it's necessary to obtain health education for respiratory infectious diseases (90.1%, 96.5%, 93.9%, 97.4%, 89.6%, 99.6%, & 99.6% respectively)

Table (3): Distribution total knowledge & attitudes scores of school teachers and school nurses regarding upper respiratory tract infection (n = 234).

Total scores	NO.	%
Total knowledge scores:		
Satisfactory	111	47.4
Unsatisfactory	123	52.6
Mean ± S.D	29.7 ± 2.1	
Total attitude scores:		
Positive	233	99.6
Negative	1	0.4
Mean ± S.D	17.5± 1.1	

Table (3): showed that, in relation to total knowledge & attitudes scores of teachers and school nurses' regarding upper respiratory tract infection, (52.6 %) of them had unsatisfactory level of knowledge while (47.4%) had satisfactory level of knowledge about upper respiratory tract infection but, the majority of sample subject (99.6%) had positive attitude toward action must done before, during and after upper respiratory tract infection occur.

Table (4): Correlation between demographic data and school teachers and school nurses knowledge and attitudes regarding upper respiratory tract infection (n = 234)

Demographic data	Total knowledge scores		Total attitude scores	
	r	P – value	r	P – value
Age	-.299**	.000	.020	.763
Qualifications	.200**	.002	-.048	.463
Years of experience	-.278**	.000	.059	.367
Sources of getting information	.139*	.033	.141*	.032
Sex	.028	.675	-.119	.069
School place	.050	.445	.113	.085
From your point of view this income	-.015	.819	-.003	.969

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

Table (4): this table mentioned that as regard to correlation between demographic data teachers and school nurses knowledge regarding upper respiratory tract infection, there were weak positive association between total knowledge regarding upper respiratory tract infection and qualification and sources of getting information (r = .200**, .139* respectively) also, between total attitude scores and sources of getting information (r = .141*), but there were fair negative association between age, years of experiences and total knowledge scores (r = -.299**, -.278** respectively).

Table (5): Correlation between prevention of spread of upper respiratory infections and school teachers and school nurses knowledge and attitudes regarding upper respiratory tract infection (n = 234)

	Prevention spread of respiratory infectious diseases	
	r	P – value
Total knowledge scores	.166*	.011
Total scores of attitudes	.297**	.000

*Correlation is significant at the 0.05 level ** Correlation is significant at the 0.01 level

Table (5): illustrated correlation between prevention of spread of upper respiratory infections and school teachers and school nurses knowledge regarding upper respiratory tract infection. There were significant relation between prevention spread of respiratory infectious diseases and teachers' knowledge and attitude regarding upper respiratory tract infection (r = .166*& .297** respectively).

Discussion

Schools are important settings for comprehensive health promotion. The school exerts the most influence on the lives of children and youth. Schools can play a key role in supporting students' health and by extension the health of their families and communities. Studies have also shown that teachers in primary schools can implement an effective health education program for school children [10].

Based on the results of the present study, more than three quarters (76.1%) of the study sample were females, more than one third(41%) have ages range between 35- 46 years with mean 39.4 ± 8.7 years and near half (47.9%) from rural schools. The results were in the same line with Htun et al., (2013)[10]who study Knowledge, attitude and reported practice of primary school teachers on specified school health activities in Danuphyu, reported that most of teachers were from the rural schools (69.1%), females (91.8%); in the age range of 22-57 years. According to Abed El-kader,(2002)[11] who study Evaluating the current states of school health nursing services in Bani-Suef governorate, reported that, the age for school nurses are ranged from 40 to less than 50 years old, and the mean of total age was 41.07 ± 7.79. While El-Maghraby, (2002) [12] who study Evaluation of training program for school health nurses in Assiut city, stated that most school nurses aged between 40- 49 years.

As regard years of experience, one third of the study sample have experience less than 10 year, with mean 15.9 ± 9.4 years. The current study finding disagreed with Abed El-kader, (2002) [11] who mentioned that; the mean years of experience of the total sample was 22.95 ± 7.76. While El-Maghraby,(2002)[12] stated that most of sample had more than 20 years of experience.

As regard level of education near to half of study sample have university qualification. The results were in the same line with Hashem, (2009) [13] who study Assessment of Knowledge and Practice of Primary School Personnel towards Communicable Diseases among School Age Students in El-Minia City, reported that only two nurses from 12 school nurses have a diploma program of education.

Concerning the teachers and school nurses opinion toward best methods of health education for primary school students, third fourth of them said combination between posters, pictures, lectures and handout are best methods of health education.

Regarding attitude of teachers about upper respiratory tract infections among students, the current study showed that; the majority of teachers agreement were in referring of ill students with respiratory infections to the school nurse, it's important to observe students contact after the isolation of the infectious case, should observe the student with infectious disease when returning to school after cure, it's necessary to follow up the absences and ask about the cause of absence, must report the members of the school after the return of the student, should guide students to follow positive health behaviors, and it's necessary to obtain health education for respiratory infectious diseases.

Rew et al., (2010) [14] who study Factors associated with health behaviors in middle childhood & Salmivalli C, (2010) [15] who study Bullying and the peer group a review, Aggression and Violent Behavior, were also in the same line and reported that; school teachers play a critical role in identifying apparent health problems and in bringing them to the attention of health specialists, but not be expected to detect all significant problems. In fact nearly every teacher will have interactions with students with medical condition at some point in his or her career. Hence school teachers may feel responsible for providing care to a child with medical condition, while also feeling ill equipped to meet the child's needs. Clay et al., (2004) [16] who study school teachers' experiences with childhood chronic illness, Clay, (2004) [17] who study helping school children with chronic health problems: A practical guide & Huffman et al., (2003)[18] who study health problems in classroom, added that school teachers are front line resource for children with special health care needs and they are often responding firstly to the needs of these children at school.

The current study showed that; 47.4 % of the study sample had well knowledge related to prevention and treatment of infectious diseases. The results were in the same line with Tossavainen et al., (2004) [19] who study Health Promotional Education: Differences between School Nurses' Health counseling and Teachers and reported that; about 48 % of teachers have well knowledge about prevention and treatment of infectious diseases. But, the majority of the sample subject had positive attitude toward action must do before; during and after upper respiratory tract infection occur. These results from the researcher's opinion were due to lack of training program in school health program.

The results of the current study showed that there were weak positive association between total knowledge regarding upper respiratory tract infection and qualification and sources of getting information (r = .200**, .139* respectively) also, between total attitude scores and sources of getting information (r = .141*), but there were fair negative association between age, years of experiences and total knowledge scores (r = -.299**, -.278** respectively). There were weak positive association between prevention of spread of upper respiratory infections and teachers & school nurses' knowledge and attitude regarding upper respiratory tract infection (r = .166*& .297** respectively). These results from

the researcher's opinion were due to lack of training program and guidelines related to prevention of upper respiratory tract infection.

Recommendations

Based on results of the present study the following can be recommended:

1) Increase the number of school nurses and provide a school nurse to every school.
2) Encourage future educational programs for school teachers, that focusing on: causes of upper respiratory tract infection, mode of transmission, sign and symptoms, understanding of the environment that affects the spread of the disease and ways of preventions.
3) Encouraging the role of school nurse in health education for controlling of upper respiratory tract infections.
4) Outline the actions to be taken if an outbreak occurs in schools.

References

1. Baloch MN, Siddiqui NZ, Bano A, Siddiqui S, Kiran T, Khan MK, et al. A cross sectional survey: Attitude towards adult vaccination in Karachi-Pakistan. International Journal. 2015;3(3):512-21.
2. RISK W. MORRIS-UNION JOINTURE COMMISSION]) developmental Learning Centers October 2014.
3. Organization WH. WHO vaccine-preventable diseases: monitoring system 2015 global summary. Geneva, Switzerland: World Health Organization; 2016. apps who int/immunization_monitoring/globalsummary/ Accessed September. 2015;3.
4. Organization WH. WHO vaccine-preventable diseases :Health and Population Directorate at Minia,(2015):preventive medicine department. 2015 .
5. Clark MJ, (2014): Community health nursing.5th ed, in pearson education, Inc., Upper Saddle River, New Jersey, pp.631-656,826-844
6. Arhaim SM, Elzahaf RA. Assessment of the role of school health nurses/school health supervisors in the prevention and control of communicable diseases in primary schools in Derna, Libya. International Journal Of Community Medicine And Public Health. 2016; 3(10):2775-80.
7. Crosson & James E. (2013): Comprehensive school health education columbs, 8th (ed), oH, Meeks Heit publishing company
8. Cohen NJ. Respiratory Illness in Households of School-Dismissed Students during Influenza Pandemic, 2009-Volume 17, Number 9—September 2011-Emerging Infectious Disease journal-CDC. 2011.
9. Vanek C. Likert Scale-What is it? When to Use it? How toanalyze it? Widgix, LLC dba SurveyGizmo. 2012;24.
10. 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 Journal of Public Health. 2014;3(1):24-9.
11. Abed El-Kader MA. Evaluating the current states of school health nursing services in Bani-Suef governorate. PHD thesis. Faculty of Nursing Cairo University. 2002
12. El Maghrabi NM. Evaluation of training program for school health nurses in Assiut city. PHD thesis. Faculty of Nursing Assiut University.2002
13. Hashem AM. Assessment of Knowledge and Practice of Primary School Personnel to wards Communicable Diseases among School Age Students in El-Minia City. PHD thesis. Faculty of Nursing El- Minia University.2009
14. Rew L, Horner SD, &Fouladi RT Factors associated with health behaviors in middle childhood, J PediatrNurs 2010; 25: 157-166.
15. Salmivalli C. Bullying and the peer group a review, Aggression and Violent Behavior 2010; 15: 112-120.
16. Clay DL, Cortina S, Harper DC, Cocco KM, and Drotar D. Schoolteachers' experiences with childhood chronic illness. Children's Health Care, 2004; PP: 33, 227-239.
17. Clay DL. Helping school children with chronic health problems: A practical guide. New York: Guilford Press, 2004; PP: 217.
18. Huffman DM, Fontain KL, & Price BK. Heath problems in classroom: An A-Z reference guide for educators Thousand Oaks, CA:Corwin, 2003.
19. Tossavainen K, &HanneleTuruen H. Health Promotional Education: Differences between School Nurses' Health counseling and Teachers. University of Kuopio, Department of Nursing. Finland, 2004; PP: 375-379. Published online Wiley interScience (www.interscience. Weily.com).