Original Article

Survey on Environmental Indices of Primary School in Behshahr City, Iran 2012-2013

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Abstract

Background and purpose: Schools are the most appropriate and reliable places for training and educating students. If health principles are not observed in schools, students will be prone to different kinds of health problems. Thus the aim of this research is to study the environmental indices in primary schools in the Behshahr city in 2012.

Materials and Methods: This is a cross sectional descriptive study. 20 private and governmental primary schools affiliated to ministry of education were selected using census method. Data were collected in the questionnaire prepared based on the environmental standard of the ministry of health. The questionnaire was filled during interviews with school principal and direct observation. The data were analyzed using, Excel, and SPSS softwares.

Results: The results of this search showed the hygienic statues of schools in water supplying (85%), waste water disposal (75%) and washbasins (70%), garbage disposal (100%) were favorable. But they were unfavorable for play ground 90%, green area 95%, lavatory with flash tank and ventilation 80% window without net 90% and fire extinguishing capsule 80%.The findings also showed a significant difference between the health statuses of different schools.

Conclusion: Most (80%) schools had a pleasant situation or a relatively acceptable hygiene regarding the health instruction guide for schools' environment. This requires more attention of the authorities towards the improvement and promotion of the hygienic status of schools.

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***Key words*:** Primary School, Environmental Health Indices, Behshahr

1. Introduction

The primary schools are the first social places where the children enter in, and spend the main period of their life which is contemporary with their somatic and mental growth. It is believed that school is a special social place from the view points of education, physical and personality growth of the children. Therefore, such places by having hygienic safe condition influence in the health improvement and mental growth of the students. In this regard, the educational settings are established and managed by having proper education method, proper environmental circumstances a mental excellency (1, 2, 3). Because of that, in case of any negligence in keeping their health leads to unrecoverable consequences, which may last for years. If the main environment health principles such as providing the sanitary drinking water and proper waste disposal are not observed the students may face parasital infection, infectious disease and particularly diarrhea (4,5). Numerous relevant studies have been done, that could help in improvement of health condition of the schools. In a study on the 59% of elementary boy and girl students in Yasoj (Iran) reported the intestinal parasitic infection (6). In Ardbil city (Iran) reported 22.8% of the students infected at least to one type of parasite (7). A study has been done on the elementary schools of Tehran province and compared the conditions with the school environment health regulation and found that many of the schools in situations are lower than the standard level (8). The other study has done on the health condition of the elementary school of Sari city (Iran) indicated hygienic conditions of lavatory in 64.4% about the end of the washing basin 35.5% that were lower than the standard level (9). A similar study done in the elementary school of Yazd (Iran) revealed that 99.3%, 65.5%, 4.46%, 32.4% and 78.4% of the schools have a proper condition for drinking water, waste disposal, lavatory water drinking place, and washing basin respectively (10). In many countries and in Iran, without considering school building conditions and the educational space try more to increase the students number which leads to onset of various hygienic problems in the school environment. Therefore, a study on how to provide proper hygienic condition in the school and giving suggestion in improving the conditions is the duty of the health staff. In different cities these problems should be solved by the scientific procedures. Knowing the role of the environment health in improvement of health level of the society, this study was designed and investigated on the hygienic condition of the elementary schools in the Behshahr city of Iran in 2013.

2. Materials and methods

In this cross sectional study the governmental and private elementary schools of Behshahr city affiliated to the ministry of education Iran were studied. Out of 45 (the girls' and boys') schools, 20 (4 private, 15 governmental and 1 special school) schools were selected for the study. Data on the environment health condition of school were collected in questionnaire arranged regarding the school health regulation that comprised 73 questions and indifferent sections. The first section contained questions on the general knowledge of schools under study obtained through school identify or from the managers of the schools. The other sections contained questions on the hygienic conditions, building renovation, the classes, campus, lavatory, garbage disposal and waste water disposal. The answers were designated as yes/ no, and the obtained data were analyzed using SPSS software and EXCEL. In this study, number of the students and the number of hygienic facilities (number of lavatories, washing water basins and water drinking places were considered) and the proper ratio between the number of hygienic facilities and the number of the students were assessed.

3. Results

The obtained data showed that the hygienic condition of the school under study (15 governmental, 4 private and 1 special school) are good. The results on the hygienic conditions such as garbage and waste water disposal are given in the table-1 indicating very good condition. The data on the renovation of the school yard, including the ground, the playing ground, playing space, the green area and the playing tool safety are given in the (Table 2). It was found that the parameters related to the playing space (90%), green area (95%) and playing tool safety (95%) of the schools under study were not in proper conditions. The data on the hygienic condition of lavatory, washing basin and drinking place are given in the (Table 3).The obtained data show that in 80% of the schools under study the lavatories lacked ventilation and flash tank. Referring to the parameters such as, per 40 students one lavatory, one washing basin and the distance of water drinking place 15 meters away, did not match in 55% of the schools under study. The hygienic condition and safety of the classes regarding the light, black board the color of the wall of the classes and about window etc. are given in the (Table 4). The obtained data reveal that considering to the parameters related to the least space needed by the student, the fitness of black board color, the physical condition of the class such as length, width and height of the class in 65% of the schools under study were improper, and in 90% of the schools the windows lacked the net. The data on the laboratory, workshop, canteen, tea preparing room and the library conditions are given in the (Table 5). It was found that 85% and 80% of the schools lacked laboratory and fire extinguishing capsules, respectively.

Table 1. The hygienic condition of Behshahr elementary schools differentiating the hygienic condition of waste water and garbage (N=20)

The health factor	The relevant parameters	Pleasant	
		Number	(%)
Waste water and garbage	- Lavatory waste water effluent	15	75
	- Washing basin effluent	14	70
	- Drinking place effluent	17	85
	- Tea preparing room effluent	20	100
	- Garbage disposal	20	50
	- The number of dust bins per number of the students	10	50
	- Daily garbage disposal	19	95

Table 2. The data from the hygienic condition of the elementary schools under study in Behshahr city by differentiating the hygienic condition and school yard renovation(N=20)

The health factor	The related parameters	Pleasant	
		Number	(%)
The hygienic condition and yard renovation	- The yard ground (making tar or tile)	19	95
	- Playing ground covering	19	95
	- Per 10 students,10 m^2 of playing ground	2	10
	- Per every student 0.5 m^2 green area	1	5
	- The safety of the playing instruments	1	5

Table 3. The hygienic condition of the Behshahr elementary schools under study, by differentiating the hygienic and renovation of the hygienic services systems (N=20)

The hygienic factor	The related parameters	Pleasant	
		Number	(%)
The school hygienic services	- Lavatory having flash tank	40	20
	- Lavatory having the ventilation system	4	20
	- The lavatory window has net	17	85
	- The lavatory is disinfected after use	20	100
	- Per 40 students one lavatory	9	45
	- The ground level of the washing basin proportion to the age of the students	18	90
	- The washing basin is provided with liquid soap	20	100
	- Per 60 students one washing basin	12	60
	- Presence of hygienic drinking water place	15	75
	- The ground floor level of the drinking water place proportion to the age of the students	17	85
	- Number of drinking water places proportion to the number of the students	11	55
	- The distance of washing basin and drinking water place is 15 meters	8	40

Table 4. The hygienic condition and renovation of the schools classes under study at Behshahr city (N=20)

The hygienic factor	The related parameters	Pleasant	
		Number	(%)
The school classes	- The wall dried, smooth and without crack	17	85
	- The floor washable and with proper slope	20	100
	- The roof smooth and without crack	19	95
	- The ventilation system in the class	20	100
	- The least requirement of the space for the student	7	35
	- The color of the board being suitable	20	100
	- The distance of board from the first raw of the chairs (at least 2.20 meters)	7	35
	- The width the length and height is suitable (length 8 meter, width 7 meters and height not less than 3 meters)	7	35
	- The windows dominant to the out space	20	100
	- The out space dominant windows are installed with net	2	10
	- Having balcony and traces	20	100
	- The light enter the class from the left side	10	50
	- The light is enough in the class	14	70

Table 5. The data on the hygienic condition and renovation of the school building (N=20)

The hygienic factor	The related parameters	Pleasant	
		Number	(%)
The hygienic condition and renovation of the school building	- The school building is 500 meter away from the noises sources	17	85
	- The workshops and the sports saloons do not disturb the classes	20	100
	- The window are placed in the right place	19	95
	- The color of the walls are suitable from health point of views	10	50
	- Presence of praying centre	16	80
	- Presence of laboratory	3	15
	- The laboratory is equipped with the fire extinguishing capsule	4	20
	- Is the laboratory in hygienic position	10	50
	- Presence of tea preparing room in the school	20	100
	- Does the tea preparing room ceiling is washable and with proper slope	15	75
	- Presence of falling spot but the net is installed	13	65
	- The width of the steps at least 30 cm, length 1.30 meter and the height of each step maximum 18 cm.	17	85
	- Do the multi-floor schools have the emergency step	13	65
	- Presence of two emergency routes	7	35
	- Presence of store for keeping the used materials	16	80
	- Presence of pool in the school	20	100
	- Presence of canteen in the school	11	55
	- Presence of library	13	65

4. Discussion

This study was performed to investigate the hygienic condition of the elementary schools in Behshahr city. It was found that 80% of the schools have proper hygienic condition which agrees with the other relevant reports given in the central province and the Shahrkord, Sanandaj, Qazvin and Esfahan cities (11-14). We found that 85%, 75%, 70% and 100% of the schools under study have good status for the water drinking place, garbage disposal, washing basin and waste disposal respectively. Similar studies have been done in Kehkloyeh-Boyerahmad province in Gajsaran city indicated that 90%, 81%, 86% and 99.3% of the schools had lavatory, washing basin, drinking water place and garbage disposal system respectively (15, 16). The per capita green area of the student is 0.5 square meter which but was not observed in 95% of the schools under study, which agrees with the data about the lack of green space in the schools. Knowing that the green area gives refreshness to the place and is an important factor in improving the mental status of the students (3). Only 45% of the schools under study had one lavatory for per 40 students, 20% were equipped with the fire extinguishing capsule, 35% had two emergency passages. Therefore the improvement of the safety level should be the future program.

Also 86.8% of the schools had improper canteen, therefore the ministry education and health ministry cooperatively should implement the regulations and try to improve the condition. Comparison of the data from the studies performed in the Yasoj, Sanandaj and Azadshahr cities indicated that the hygienic condition of the lavatory in the Behshahr elementary schools is proper (3, 12, 13, 17). Knowing that healthy drinking water is the basic principle of general health, 100% of the schools under study benefited healthy drinking water which corresponds with the reports given in Sanandaj, Mazandaran and Yasoj provinces (2, 13, 18), suggests the particular attention of the government to the public health. Adeghbenro and Soratiin their study on the Neigerian School showed that 50% of the schools benefited the sanitary drinking water (19). In the present study, only 50% of the schools had hygienic canteen, while in the study of Sharif and Pirzadeh same was found in 33.6% and 49.4% of schools, respectively. It is necessary that the authorities of the canteens be instructed, and periodic surveillance by environment health staff be implemented (20, 21). In our study, only 35% of the schools under study had two emergency routes which partially correspond with the report given from Esfahan (21). To correct the present unfavorable situation of the schools the execution such as, the continued surveillance of the schools is necessary, instruction should be given to the students and their parents and the school administrators, the cooperation between the ministry of health and ministry of education must come true, even by allocation of finance to overcome the problems and for school maintenance.

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