Evaluation of Environmental Health Condition and Safety of Primary Girls´School in Shahre-Kord, Iran

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Abstract: School, as a trustworthy place in educating students, has an important role in teaching. If health principles are not observed in schools, students will be prone to various of disease. This research was carried to investigate environmental health condition and safety of primary girls´ school in Shahre-kord, Iran. A cross sectional study was done in year 2013 on 31primary school the checklist has been completed this checklist about: water supply, drinking-cup, wash-basin, toilet, buffet, solid waste disposal, health room and health and safety facilities. The checklist was consisted of 17items. This checklist was according to laws and regulations of Islamic Republic of Iran Ministry of Health and Medical education. Data were analyzed using SPSS software version 13. The hygienic statues of schools were suitable in water supply 100%, drinking-cup (each drinking-cup for 45 students 67. 74% and health condition70. 96%), wash-basin health condition 77. 41%, toilet health condition70. 96%, buffet 51. 61%, solid waste disposal 74. 19% and health room51. 61%. The findings showed that 22. 58% of the schools had excellent condition, 25. 8% good condition, 19. 35% fair condition, 41. 93% poor condition. Most schools had a suitable situation or a relatively suitable regarding the health instruction guide for schools' environment. This requires more attention of the authorities to the necessity of improvement and promotion of the hygienic status of schools.

Key words: Environmental Health · Primary Schools · Shahre-Kord

INTRODUCTION

A typical child spends about 1100 h in classroom each year. Time spent in classroom is mainly for learning and academic purposes. Thus, classroom indoor environmental quality conditions should be conducive for such purposes. Indoor environmental quality include indoor air, thermal, acoustics, visual (light) and spatial condition. Chemical pollutants and biological factors in the classroom, on the playground, in the science lab, or in other school facilities can lead to health risks and adverse learning conditions. They can affect many different body systems and impact health, learning, productivity and self esteem. Psychological effects of the environment on children have been shown in terms of crowding, greenness, thermal, ventilation, noise and lighting [1-4].

Indoor environmental quality of schools is influenced by the location of the building and its environmental quality and by different building-related factors, such as the condition, maintenance and cleaning of the school building [5]. Indoor environmental quality is also affected by pollutants that are generated indoors. Pollutants that may worsen indoor air quality in classrooms include pesticides, lead, mercury, molds, bacteria, paints, sealants, allergens, particles, volatile organic compounds (VOCs) and formaldehyde [6]. In addition, studies have estimated that 25%-33% of the global burden of disease

Can be attributed to environmental risk factors enhancing the quality of life [7-9]. Some important essentials of environmental health indicator-the first line of defines against disease include the following: water supply- ensuring that drinking water is available for all of

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the students; waste disposal management - disposing of human wastes in septic tank systems and sewage treatment plants; solid waste management-treating and disposing of solid waste; environmental safety and accident prevention-designing features into the environment such as fire control and safety ceiling [10]. Several extensive researches on school environment health indices and facilities have been carried out in the world of education. Previous reports show that insufficient of environment health indicator and facility involved teaching and learning performance, both for student and staff health and safety [11]. According to the World Health Organization, 11% more girls be present at school when sanitation is available [12]. Many children in both developing and developed nations spend time absent from schools due to diseases contracted within the school environment [13]. We did not find in the literature any previous research concerning of environmental health condition and safety of primary girls´ school in Shahre-kord, Thus, the aim of this study was to evaluation of environmental health condition and safety of primary girls´school in Shahre-kord, Iran.

MATERIALS AND METHODS

Across sectional study was done in year 2013 in 31 primary girls´ school in Shahre-kord the checklist has been completed this checklist about: water supply, drinking-cup, wash-basin, toilet, buffet, solid waste disposal, health room and health and safety facilities.

The checklist was consisted of 17items. This checklist was according to laws and regulations of Islamic Republic of Iran Ministry of Health and Medical education [14]. Water supply (2 items), drinking-cup (3 items), wash-basin (2 items), toilet (2 items), buffet (1 item), solid waste disposal (1 item), health room (1 item) and health and safety facilities (5 items). The questions using a three-point rating scale (yes, no and uncertain). The calculated indicator value ranges from 45 to 100 and classifies schools as poor (45-50), fair (60-70), good (80-90) and excellent (95-100). Data analysis was carried out with descriptive statistics using frequencies, percentages and mean.

RESULTS AND DISCUSSION

The hygienic statues of schools were suitable in water supply (water piping 100%, water confirmed by health officials100%), drinking-cup (each drinking-cup for 45 students 67. 74%, drinking-cup height (75-100cm93.

54% and health condition 70. 96%), wash-basin (each wash-basin per 60students70. 96% and health condition 77. 41), toilet (each toilet per 40students61. 29% and health condition 70. 96%), buffet 51. 61%, solid waste disposal 74. 19%, Health room51. 61% and health and safety facilities (distance between chalkboard and the first row students 67. 74%, 1. 25 m^2area per students58. 06%, having lace window12. 90%, safety ceiling80. 64% and fire control90. 32%) (Table 1). The findings showed that 22. 58% (4 case) of the schools had excellent condition, 25. 8% (8 case) good condition, 19. 35% (6 case) fair condition, 41. 93% (13 case) poor condition (Table 2). The results show that the best indicator of environmental health in this study was water supply with 100% (31 case) and the worst indicator of environmental health was having lace window with 12. 9% (27 case). In this study distance between chalkboard and the first row students 67. 74% was about 220 cm, in another research distance ranged between 46 and 287 cm [15].

Distance between 1st row and chalkboard should be about 220 cm Such closeness increases students' risk of being exposed to particles generated from the teaching board. As evident from walk through investigations, it is recommended that there should be one toilet for every 40 girls, only 61. 29% of schools had one toilet for 40 students. Another report revealed that %66. 3 of schools had each toilet was provided for 40students [16]. The findings showed that70. 96% of schools had healthy toilet. Another report revealed that %57. 14 of schools had healthy toilet [17]. The findings showed that51. 61% of schools had healthy buffet. Another report revealed that 86% of schools had healthy buffet [18]. Report given by Shahriari in Birjand, Iran indicated that hygienic statues of schools were unfavorable in buffets 86. 8% [19].

Only 74. 19% of schools had healthy solid waste disposal, reports given by Shahriari and Sohrabian indicated that 72. 8% and 85% schools had healthy solid waste disposal, respectively. only 67. 74% of schools had one drinking-cup for 45 students [19-20]. Another report revealed that 56. 3% of schools had schools one drinking-cup for 45 students [21]. The findings showed that70. 96% of schools had healthy drinking-cup. Another report revealed that 65. 85% of schools had healthy drinking-cup [22]. The findings showed that77. 41% of schools had healthy wash-basin. another report revealed that 65. 85% of schools had healthy wash-basin [22]. The findings showed that51. 61% of schools had health room. Another report revealed that 65. 85% of schools had health room [17].

Table 1: Status of indicators environmental health at primary girls´school in Shahre-kord, Iran

Indicator	Parameters	Suitable*		Unsuitable**	
		n	%	n	%
Water supply	Water piping	31	100	0	0
	Water confirmed by health officials	31	100	0	0
Drinking-cup	Each drinking-cup for 45 students	21	67.74	10	32.26
	Drinking-cup height (75-100cm)	29	93.54	2	6.46
	Health conditions	22	70.96	9	29.04
Wash-basin	Each wash-basin per 60students	22	70.96	9	29.04
	Health conditions	24	77.41	7	22.59
Toilet	Each toilet per 40 students	19	61.29	12	38.71
	Health conditions	22	70.96	9	29.04
Buffet	Health conditions	16	51.61	17	48.39
Solid waste disposal	Having ash bin	23	74.19	8	25.81
Health room	Having health room	16	51.61	17	48.39
Health and safety facilities	Distance between chalkboard and the first row students	21	67.74	10	
	1. 25 m^{2}area per students	18	58.06	13	41.94
	Having lace window	4	12.90	27	87.1
	Safety ceiling	25	80.64	6	19.36
	Fire control	28	90.32	3	9.68

*More than 80% agreement, **less than 80% agreement

Table 2: Distribution of frequency and Relative frequency environmental health at primary girls´school in Shahre-kord, Iran

Frequency	Poor (45-50)	Fair (60-70)	Good (80-90)	Excellent (95-100)	Total
Frequency	13	6	8	4	31
Relative frequency (%)	41. 93	19. 35	25. 8	22. 58	100 (%)

Only 70. 96% of schools had one wash-basin for 60 students, another report revealed that 35. 5% of schools had one wash-basin for 60 students [21].

Only 12. 9% of schools had having lace window, another report revealed that 2. 1% of schools had having lace window [21]. Only 100% of schools had healthy potable water, report given by Malakootian in Kerman, Iran indicated that 89. 9% of schools had healthy potable water [18]. Another report revealed that 100% of schools had healthy potable water [21].

Many schools in developing and developed countries lack adequate water and sanitation services, with associated potential detrimental effects on health and school presence [23]. Only 90. 32% of schools had fire control, another report revealed that 53. 84% of schools had fire control [24-25]. Another report revealed that 91. 3% of schools had had fire control [17]. Only 58. 06% of schools had 1. 25 m^{2}area per students. Another report revealed that %93. 4 of schools had dimension smaller than minimum standard [21].

CONCLUSION

The school is the most important setting, after the home, in the development of students. Environmental health indices have the important role to ensure the quality of teaching and learning with respect to achieve quality of education. The performance of environmental health indices significantly affected on student achievement. Most schools had a suitable situation or a relatively suitable regarding the health instruction guide for schools' environment. This requires more attention of the authorities to the necessity of improvement and promotion of the hygienic status of schools. The results are expected to be used as a guide for school to improve school Environmental health and facilities in primary school in Shahre-kord, Iran concurrently leading to the improvement of the quality of education in Shahre-kord, Iran in the future.

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