

## Original Article

# The Accordance of Schools Health Status with the Regulations of School Health in Yazd

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### Abstract

**Introduction:** A large body of literature on school health and review of its history in the world shows that most countries have paid special attention to this issue. The students' health is of high importance, not only because they comprise the vulnerable population of the society, but also because they are the future national and human capital and the guarantors of a country's socioeconomic development.

**Materials and Methods:** In this descriptive study the statistical population included all 110 primary schools (girls' and boys') in Yazd, 2nd district, of which 50 were randomly selected. The data were gathered using a questionnaire with two separate parts. The first part was about environmental health and safety status of the schools and the second was about their public health status. The validity of the questionnaire was confirmed by experts' judgment and the reliability was estimated to be 82% using Cronbach's alpha test.

**Results:** Most of the schools had suitable area per student, health care rooms, standard first aid kit, appropriate drinking fountains, and standard toilets. In 66% of the schools the distance of the blackboard from the first student was  $\geq 2.5$  m. Most of the schools had appropriate indexes for the status of light, ceiling, color and class wall.

**Conclusion:** The results of this study indicated that the health status of primary schools of Yazd, 2nd district, was consistent with the required standards of school health regulations. Health status was not significantly different in girls' and boy's schools.

**Keywords:** School health, schools in the 2nd district of Yazd, Health standards, School health regulations.

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## Introduction

Considering the school building and environment is the first action in school health. William Alcott described the school building in 1892. In 1837 Horacemann published a remarkable paper about school health and in 1850 he taught physiology in a simple way for the first time in primary schools <sup>[1, 2]</sup>.

In 1894 after the outbreak of a dangerous epidemic in the US, Samuel Dargin implemented medical examinations at schools in Boston, followed by Chicago in 1895 and New York in 1898. In this program the students were under the care of doctors at school. School health program is definitely one of the most crucial and fundamental programs implemented in the world <sup>[3]</sup>.

A two-year course was held in Iran in 1350 for health care professionals who were the core of providing health care at schools. At present school health programs are a part of the Head Office for Family Health activities. Standards of Health Education provide appropriate solutions for increasing preparedness, learning progress, retraining, and performance appraisal of students and teachers <sup>[15, 18]</sup>.

In this study the Rules and Regulations for School Environmental Health were used. Some of the items are as follows:

Each student needs an area of at least 1.25 m<sup>2</sup> in the class.

The class ceiling height should not be less than 3 m.

The class floors, corridors and stairs should be resistant, flat, washable and not slippery.

The class ceiling should be flat, without cracks and in light color <sup>[5, 19]</sup>.

The class board should be located in an appropriate place with enough light where all the students can see it. The color should be non-shiny green to avoid light reflection. The distance of the board from the first row of students should not be less than 2.20 m.

Any kind of balcony related to the class is prohibited <sup>[4, 5]</sup>.

According to World Health Organization (WHO), *Health* is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Also WHO defines *Education* as a general term related to all the factors, experiences and processes which affect the act of acquiring information, attitude, skills development and modifying behavior <sup>[1]</sup>. The following objectives were considered to investigate the effective factors in primary schools' health status in Yazd, 2<sup>nd</sup> district, in the Educational Year 1390-91:

The study and analysis of the current health status in primary schools of Yazd province.

The study of the causes and effective factors in health status of schools

The study and comparison of student's health status with the government standards.

The study of the role and importance of health care professionals in providing health care.

The study of professional personnel in school health.

The comparison of the public status of health between the boys' and girls' schools

The comparison of the public status of health in schools with a health care trainer

The comparison of the public status of health in schools without a health care trainer.

Presenting suitable solutions for the improvement of the health status of schools.

School environmental health includes the building, water, toilet, waste disposal, classes environmental health, safety etc. <sup>[5, 6]</sup>.

Health standards are those set by the Ministry of Education and Training titled School Health Rules and Regulations with 37 items <sup>[5]</sup>.

**Health trainer:** Health trainers have passed school health courses along with the general subjects at Teacher Training Centers for two years. They are familiar with different disease signs and symptoms, diagnosis methods, disease control, vaccination, Tuberculin or P.P.D test <sup>[7]</sup>.

## Materials and Methods

This is a cross-sectional descriptive-analytic study in which the statistical population included all 110 primary schools (girls' and boys') in Yazd, 2<sup>nd</sup> district in the educational year of 1390-91. Regarding the control of some factors such as geographical location, ecosocial and cultural position of the students and school officials, and the motive for founding and administering the school, particular primary schools including Shahed, Public Exemplary, and Non-profit schools were selected. Sampling was performed by a random proportional approach in which the 2<sup>nd</sup> district was divided into four subpopulations and the samples were randomly selected in each part. Finally, 50 schools were recruited from different sectors of the city <sup>[8]</sup>.

The data were gathered using a questionnaire with two separate parts. The first part was about environmental health and safety status of the schools including 55 closed questions and one open question. The items were carefully written according to School Health Rules and Regulations issued by the Ministry of Education and Training.

The second part was about public health status of the schools including 19 closed questions and one open question. This part was designed considering the rules of the Ministry of Education and Training, the expertise of school health professionals and health trainers. Public health status of the schools was classified as excellent, good, average, poor, and very poor.

The validity of the questionnaire's content was confirmed by the experts' judgment and its reliability was estimated to be 82% using Cronbach's alpha test.

## Results

Of the study population, 50 subjects including 25 girls' and 25 boys' schools were selected. 26% of the schools were <500 m and 74% were >500 m away from noisy centers. According to school regulations, this distance should be at least 500 m. 60% of the schools had standard area per student ( $1.25 \text{ m}^2$ ) and 38% did not.

Distance from public transportation route was <300 m in 64%, 300 to 500 m in 28%, and >500 m in 8% of the schools.

74% of the schools had health care room and first aid kit and 26% did not. Area for health care room was up to standard ( $>12 \text{ m}^2$ ) in 56% of the schools and in 28% was  $<12 \text{ m}^2$ .

84% of the schools had appropriate drinking fountains and 16% did not. It should be noted that the ratio of students to drinking fountain is 45:1, while the height should be proportional to the age of the students. 76% of the schools had adequate toilet index and 22% did not have an appropriate index. The ratio of students to toilets is at least 40:1, and the ratio of students to sinks is 60:1. The information related to light, ceiling, floor, wall and color indexes are shown in Table 1 which is rather satisfactory.

**Table 1.** Total frequency of light, ceiling, floor, wall and color indexes

Index	YES		NO	
	n	%	n	%
Color	41	82	5	10
Ceiling	42	84	8	16
Floor	40	80	10	20
Light and Brightness	47	94	2	4
Class Height	47	94	1	2

The class board should be in an appropriate place with enough light where all the students can see it. The color should be non-shiny green to avoid light reflection. The distance of the board from the first row of students should not be less than 2.20 m.

Also the distance of the board from the first row of the students was <2.5 m in 15 schools, =2.5 m in 30 schools, and >2.5 m in 3 schools.

**Table 2.** Frequency and percent of safety index

Safety index	YES		NO	
	n	%	n	%
Fire fighting	45	90	3	6
Emergency exit	19	38	30	60
First aid	43	86	7	14
Warehouse and Engine room	27	54	21	42
Waste	46	92	4	8
Rust Proof	39	78	10	20
Waste disposal	47	94	3	6
Bench and desk	47	94	3	6
Electricity	40	8	10	20

Medical examinations are performed at schools. The students' hands, nails, shoes, socks, and head hair should be controlled on a weekly basis.

**Table 3.** Frequency and percent of students' health indexes

Index	YES		NO	
	n	%	n	%
Medical examinations	49	98	1	2
Hand and finger	50	100	0	0
Head hair	49	98	1	2
Shoes and socks	42	84	8	16
Tooth brush	45	80	3	6
Soap liquid	50	100	0	0

The first hypothesis was about agreement between school health status and health standards set by the School Health

Regulations. One sample test was used to check this hypothesis.

**Table 4.** Agreement between the schools' health and health standards

	t	df	sig	lim inf	lim sup
Standard	2.704	49	9	0.611	4.147

Since both limit inferior and superior were positive and  $\text{sig} 0.009 < 0.05\%$ , the average health status of schools was higher than the

The sig of one sample test  $< 5\%$  showed that the presence of professional personnel in the field of school health was effective in health status of the schools. Therefore, this hypothesis was accepted as well.

The third hypothesis was about the effect of the students' health information on the health status of the schools.

The rate of students' health information is satisfactory. Since  $\text{sig} < 0.05\%$  and both limit inferior and superior were positive, null hypothesis was rejected indicating that the students' health information was effective on the health status of the schools.

The fourth hypothesis was about the effect of using brochures and educational aids for health education at schools.  $\text{Sig} = 0.012 < 0.05$  and positive limit inferior and superior suggested that they could be effective in health education at schools.

For testing the hypothesis of difference between the girls' and boys' schools about health status, independent samples T-test was used, where the hypothesis about comparing the average of two independent populations was tested with error level = 0.05. Since the significance level for independent T-test ( $= 0.309$ ) was less than 0.05, the difference between the average of girls' and boys' schools about health status was not meaningful. Therefore, the assumption of equal average of

average index, therefore, the first hypothesis was accepted.

girls' and boys' schools about health status was accepted and the fifth hypothesis was rejected.

## Discussion

The results of this study suggested that health status in primary schools of Yazd, 2<sup>nd</sup> district, was in agreement with the required standards of School Health Regulations. The results of the studies performed by Johnson & Johnson, Barton, and Pirzadeh (Esfahan) were consistent with those of the current study <sup>[10, 11]</sup>.

The presence of professional personnel in health fields is effective in the health status of schools. In a study about health status of girls' primary schools without health trainers in Ahvaz city, 2003, a significant difference was found in schools without health trainers regarding the recognition of the students' physical and mental problems and the environmental health. Health trainers were found to be successful in recognizing the physical and mental problems of the students and the environmental health. Considering this study, the presence of professional personnel of health can be effective in schools' health status <sup>[12]</sup>.

Student's health information and awareness influences the health status of the schools. The last mentioned study indicated that health trainers can also succeed in informing the students about health issues and improve

school health, which is consistent with the results of our study <sup>[14, 20]</sup>. Brochures and educational aids are effective in health education at schools. A large body of literature on education and the use of teaching aids in school health have shown that these materials can improve the students' perception and learning <sup>[16]</sup>.

There was no difference between the girls' and boys' schools in health status. In a study on the environmental health status, safety and ergonomics of the primary schools of Shahrood city in 2010, a meaningful difference was reported between the urban and rural schools and also girls', boys' and co-educational schools. Urban schools and girls' schools received higher scores compared to rural schools, and boys' and co-educational schools, respectively. This is in contrast with our study where no significant difference was found between the girls' and boys' schools <sup>[13, 21]</sup>.

## Conclusion

It is concluded that the physical status of the primary schools of Yazd, 2<sup>nd</sup> district was approximately in accordance with the required standards of School Health Regulations.

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Brochures and educational aids were found effective in health education. Although the results of a study in 2002 <sup>[13]</sup> indicated a better condition for boys' schools compared to girls' schools, in this study no difference was found between the boys' and girls' schools. Therefore, it can be suggested that girls' school health status has improved in the last decade.

Considering the fact that schools health status is different in various regions, further studies should be performed in the country and province levels. Education and training officials and the public media are supposed to plan more comprehensive health education programs for the managers, teachers and students.

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