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Assess the Knowledge Regarding Prevention of Accidents of Schoolers among Primary School Teachers in Selected Schools

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Accident means-Unfortunate incident that happens unexpectedly and unintentionally, The common cause of school accident is playground equipment and risk factors of the school accident are age, Most common injury occurs in schoolers is hand injury and foot injury, a road traffic accident is the most common type of accident. Primary prevention of an accident first AID and supportive care of school accident is health education and health check-up is done by half-yearly.
Objectives: 1) To assess the knowledge of primary school teachers on the prevention of accidents among schoolers in selected schools in the Wardha district.2) To compare knowledge regarding prevention of accidents in schoolers between male and female primary teachers.3) To compare knowledge regarding prevention of accidents in schoolers between rural and urban area. 4) To associate the knowledge of primary teachers regarding the prevention of accidents among schoolers with selected demographic variables.

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Methods: An descriptive research methodology, a non-experimental descriptive design was used to perform this analysis. Non-probability convenient sampling technique was used to select the available individual as a subject in the study. A structured questionnaire was developed to assess the knowledge of urban and rural 100 primary school teachers regarding the prevention of accidents among schoolers. The sample attributes have been defined by frequency, percentage, after data collection. The Chi-square test was also used to figure out the correlation between knowledge and specified demographic variables.

Results: The study findings show 0 (0%) of rural primary school teachers were having a poor level of knowledge score, 8(16%) of rural primary school teachers were having an average level of knowledge score, 21(42%) of rural primary school teachers were having a good level of knowledge score, 19 (38%) of rural primary school teachers had a very good level of knowledge score and 2 (4%) of rural primary school teachers had excellent knowledge score. The minimum score was 5 and the maximum score was 20, the mean score was 11.68 ± 3.13 with a mean percentage score of 58.40 ±15.69. The study findings show 1(2%) of urban primary school teachers were having a poor level of knowledge score, 5(10%) of urban primary school teachers were having an average level of knowledge score, 18(36%) of urban primary school teachers were having a good level of knowledge score, 20 (40%) of urban primary school teacher had a very good level of knowledge score and 6 (12%) of urban primary school teacher had excellent knowledge score. The minimum score was 5 and the maximum score was 20, the mean score was 12.62 ± 3.32 with a mean percentage score of 63.10 ±16.62. In the overall comparison of the rural primary school teachers having good knowledge regarding prevention of accidents of schoolers rather than urban primary school teachers.

Conclusion: Schoolers accident is a common problem in rural and urban school children. The main aim of the study was to assess the knowledge regarding the prevention of accidents of schoolers among the primary school teachers of the selected rural and urban areas of Maharashtra.

Keywords: Assess; knowledge; prevention; primary school teachers.

1. INTRODUCTION

Accidents are the leading cause of damage and sometimes death among children. Accidents are exclusively associated with road accidents or accidents occurring during outdoor activities. The primary cause of the accident was the negligence of school safety. Accidents cannot be fully avoided, but children should pay greater attention to school safety [1]. The children are suffering from different types of accidents such as

1.1 Accident Involving the Child Using Equipment in the Playground

Accidents involving playground equipment and the injuries that result are a major source of trauma in children. Because risk-taking and play are vital parts of kid development, the aim should not be to strive to minimize all accidents, but rather to prevent or decrease the severity of any related injuries. A school's equipment must provide according to the child's age and the danger of damage. Assume the son is utilizing the climbing frame at school after he slips and falls, and breaking his arm. The school claims that children must be able to play, that there are risks involved in providing equipment such as climbing frames, and that no amount of monitoring could have prevented the son from falling [2].

1.2 A Slip or Trip on the School Premises

The school must take care of the well-being of their children who are regarded as authorized guests on the grounds. They must preserve the premises free of problems [3].

1.3 Accident on the School Playing Fields

A school should take the necessary steps to ensure that the playing grounds are safe and free of hazards [4].

1.4 Accident on a School Trip

Even when children are not on school grounds, they should be adequately monitored and kept safe from harm [5].

1.5 School Bus Accident

A school bus driver must take extra precautions when transporting students. For example, if a bus driver abruptly uses the brakes, a kid who is not properly placed may fall and hurt himself. So it drives safely and be careful about the children sitting place [6].

Childrens are the future of every country and all society strive to ensure their health and safety [7]. Unfortunately have very common incidents occur in nurseries, schools, universities and schools at Thompsons Solicitors, Parents whose children were wounded contact us, students themselves who have suffered injuries, teachers who have been injured as well as other visitors in the school premises such as parents or delivery drivers who have suffered injuries [8].

One of the five primary causes of death is accidents in advanced and developing nations. The health issue regarding accidental injuries is rising. A yearly 10% accidents involving communication with health services [9]. One of the most susceptible categories is children lacking the danger of accidents. Indoors, younger children are more vulnerable, whereas outside, older children are more at risk. According to gender variations of accidents emerge, men are generally having more outside accidents rather than women tending to have inside injuries. Accidents are also influenced by social, economic, and cultural factors [10].

Since the 1970s, in France, the United States, Australia, and several developing nations education in injury prevention has been ongoing [11]. The state and voluntary entities concerned approaches to education aimed at parents or primary-school students. In general, the educational programs of education ministries, the health care in the country, or voluntary organizations have selected teachers, healthcare professionals, or community leaders in the process [12].

2. METHODOLOGY

The present study was an observational study conducted on 100 rural and urban primary school teachers are selected in the urban and rural areas in the Wardha district. The study was conducted from 28th December 2016 to 28th January 2017. A non-experimental descriptive design was used to perform this analysis. Non-probability convenient sampling technique was used to select the available individual as a subject in the study. Based on the extensive review of various interventions, the cultural settings, and resources available, the customized intervention was designed to manage air pollution, and this included the following components.

Pretested predesigned semi-structured questionnaires were used for data collection. The questionnaire consisted of two parts. Part one consisted of demographic data on Age of the teacher (in Years), gender, educational qualification of the teachers, type of school, and teaching experiences. Part two consisted of 20 structured questions regarding the prevention of accidents of schoolers. For scoring the knowledge of each participant Score 1 was given for each correct answer and Score 0 was given for each wrong answer.

Furthermore, Primary school teachers who are not present during data collection were excluded from the study. The concepts explored the purpose of the research. The confidentiality of the data was ensured.

Data collected were entered in a Microsoft Excel sheet. The statistical analysis was done by using Epi info 7. Frequencies and percentages were presented for categorical variables.

Knowledge was graded from poor knowledge to excellent knowledge as follows.

Chart 1. Interpretation of Knowledge Scoring

Sr. no.	Level of knowledge score	Score range	Percentage score
1	Poor	1-5	0-25%
2	Average	6-10	26-50%
3	Good	11-15	51-75%
4	Excellent	16-20	76-100%

3. RESULTS

The Table 1 depicts the frequency and percentage-wise distribution of primary school teachers with regards to their age in years, gender, educational status, type of school and teaching experience, etc.

Distribution of primary school teachers according to their age in years reveals that 18% of teachers from an urban area and 26% from the rural area were belonging to the age group of 22-32 years, 34% from an urban area, and 20% from the rural area were belonging to the age group of 33-43 years, 44% from an urban area and 40% from the rural area were from the age group of 44-54 years and 4% from an urban area and 14% from the rural area were ≥55 yrs of age.

According to their gender reveals that 20% from an urban area and 86% from the rural area were males and 80% from an urban area and 14% from the rural area were females respectively.

The distribution of primary school teachers according to their education status reveals that 26% from an urban area and 2% from the rural area were educated up to D.Ed. 36% from an urban area and 52% from the rural area were educated up to B.Ed., 30% from an urban area and 38% from the rural area were graduates and each 8% from the urban and rural area were postgraduates.

According to their type of school reveals that 44% from an urban area and 100% from the rural area were completed their education from government schools and 56% from urban completed from private schools.

Distribution of primary school teachers according to their experience in years reveals that 4% from an urban area and 34% from the rural area were fresher's, 58% from an urban area and 66% from the rural area had the experience of 1-10 years, 28% from the urban area had the experience of 10-20 years and 10% from the urban area had the experience of 20-40 years respectively.

Table 1. Percentage-wise distribution of primary school teachers according to their demographic characteristics
n=100

Demographic Variables	Urban Area	Rural Area
Age in years		
22-32 yrs	9(18%)	13(26%)
33-43 yrs	17(34%)	10(20%)
44-54 yrs	22(44%)	20(40%)
≥55 yrs	2(4%)	7(14%)
Gender		
Male	10(20%)	43(86%)
Female	40(80%)	7(14%)
Educational Status of primary teachers		
D.Ed.	13(26%)	1(2%)
B.Ed	18(36%)	26(52%)
Graduate	15(30%)	19(38%)
Post Graduate	4(8%)	4(8%)
Type of School		
Government	22(44%)	50(100%)
Private	28(56%)	0(0%)
Corporate School	0(0%)	0(0%)
Teaching Experience		
Fresher's	2(4%)	17(34%)
1-10 yrs	29(58%)	33(66%)
10-20 yrs	14(28%)	0(0%)
20-40 yrs	5(10%)	0(0%)

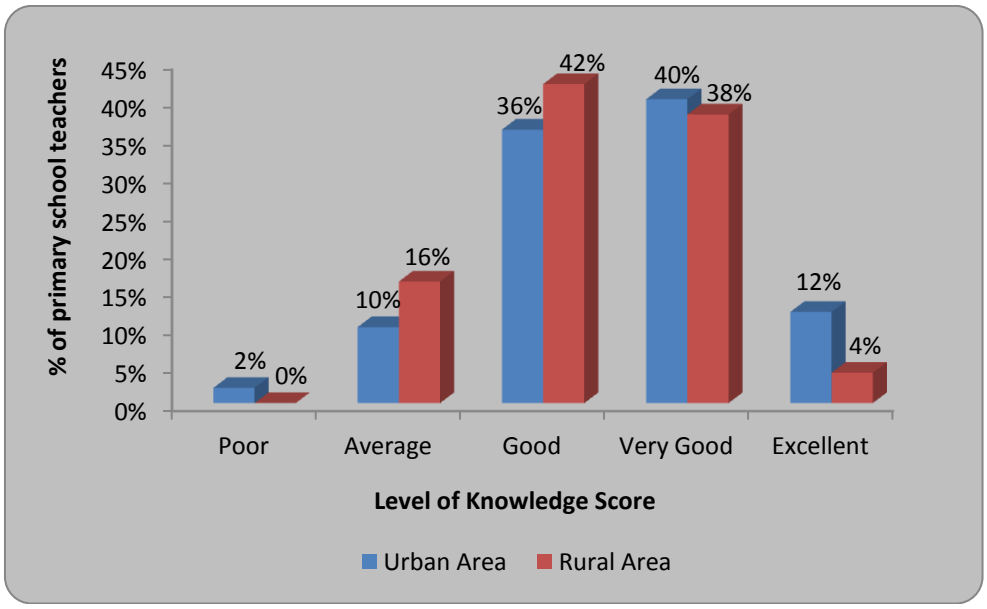
Table 2. Assessment with the level of knowledge score
n=100

Level of knowledge score	Score range	Percentage score	Knowledge score	
			Urban Area	Rural Area
Poor	1-4	0-20%	1(2%)	0(0%)
Average	5-8	21-40%	5(10%)	8(16%)
Good	9-12	41-60%	18(36%)	21(42%)
Very Good	13-16	61-80%	20(40%)	19(38%)
Excellent	17-20	81-100%	6(12%)	2(4%)
Mean±SD			12.62 ±3.32	11.68 ±3.13
Mean %			63.10±16.62	58.40±15.69
Range			4 to 17	5 to 19

The Table 2 shows the frequency and percentage-wise distribution of primary school teachers from urban and rural areas according to the level of knowledge regarding the prevention of accidents among schoolers. The levels of knowledge were seen into 5 categories, poor, average, good, very good, and excellent.

2% of the primary school teachers from urban had poor level of knowledge score, 10% from an urban area and 16% from the rural area had average, 36% from an urban area and 42% from the rural area had good, 40% from an urban area and 38% from the rural area had very good and 12% from an urban area and 4% from the rural area had an excellent level of knowledge score.

The mean knowledge score of the primary school teachers from the urban area was 12.62 ± 3.32 and in a rural area it was 11.68±3.13.

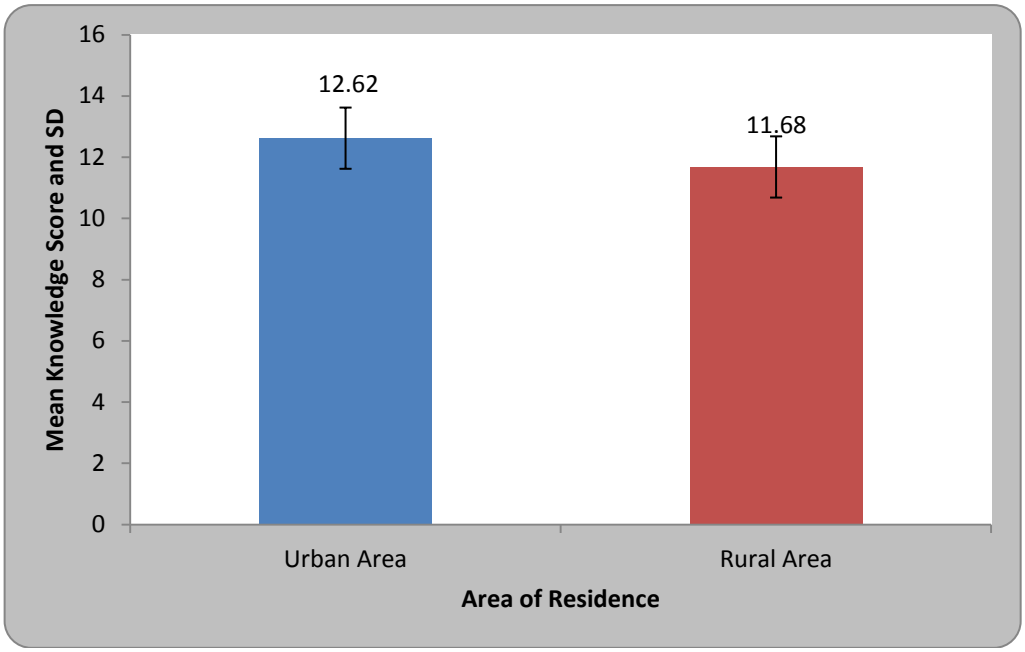


Graph 1. Distribution of primary school teachers with regards to knowledge regarding prevention of accidents among schoolers

Table 3. Comparison of knowledge regarding prevention of accidents in schoolers between male and female primary teachers
n=100

Overall	Mean	SD	Mean %	t-value	p-value
Male	11.88	3.22	59.43	0.85	0.39,NS
Female	12.44	3.29	62.26		

**NS- S*



Graph 2. Comparison of knowledge regarding prevention of accidents in schoolers between male and female primary teachers

Table 3 depicts the overall mean knowledge scores of male and female primary school teachers from urban and rural areas which reveals that the knowledge score of females primary school teachers were higher 12.44 with an SD of ±3.29 when compared with the knowledge score of male primary school teachers which was 11.88 with SD of ±3.22. The statistical Student's unpaired t-test implies that the difference in the knowledge score among male and female primary school teachers was found to be 0.85 which is statistically not significant at a 0.05% level of significance. Hence it is statistically interpreted that level of knowledge score among male and female primary school teachers was not effective. This H02 is accepted and H12 is rejected.

3.1 Statistical Formulas

A statistical analysis has been performed to determine the significant difference between these values in assessing the knowledge of school accident prevention among primary school teachers. Descriptive and inferential statistics have both been used to analyze the data.

In general, descriptive statistics are different from inferential statistics. the data describe that what is the data is or what it indicates with descriptive statistics. with the inferential statistics stretch beyond the immediate facts and trying to reach the conclusion.

The software used in the analysis was SPSS 17.0, EPI-INFO 6.0, and Graph Pad Prism 5.0 version, and $p<0.05$ is considered as the level of significance.

The statistical tests used for the analysis of the result were:

1. One way ANOVA
2. Student's unpaired t-test

3.2 Descriptive Statistics

1. **Arithmetic Mean**: The arithmetic mean, or average, is the sum of the values divided by the number of values.

Formula:

$$\overline{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

Where,

$\overline{X}$ = Sample arithmetic mean
n = Sample size
$X_i = i^{th}$ Observation of the random variable X

$\sum_{i=1}^{n} X_i$ = Summation of all the X_i values in the sample

2. Standard Deviation(SD) =

$$\sqrt{\frac{\Sigma(X - \bar{X})^2}{(n - 1)}}$$

where:

X = each score
$\bar{X}$ = the mean or average
n = the number of values
Σ means we sum across the values

3. **Mean percentage** = Total Score/no of questions

4. **Max/Min** = Maximum/Minimum value of knowledge score

3.3 Inferential Statistics

1. One way ANOVA

A One-Way Analysis of Variance is a way to test the equality of three or more means at one time by using variances.

Grand Mean

The grand mean of a set of samples is the total of all the data values divided by the total sample size. This requires that you have all of the sample data available to you, which is usually the case, but not always. It turns out that all that is necessary to find perform a one-way analysis of variance are the number of samples, the sample means, the sample variances, and the sample sizes.

$$\bar{X}_{GM} = \frac{\sum n\bar{x}}{\sum n}$$

$$\bar{X}_{GM} = \frac{\sum x}{N}$$

2. **Student's unpaired t-test:**

$$S_P = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

In all work with a two-sample t-test, the degrees of freedom or df is:- $df = n_1 + n_2 - 2$
The formula for the two-sample t-test is:

$$T = \frac{\overline{X} - \overline{Y}}{S_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

4. DISCUSSION

To assess the knowledge regarding prevention of accidents of scholars among the primary school teacher of the selected rural and urban area of Wardha district, Maharashtra. was undertaken with the objectives to assess the knowledge of primary school teachers among the selected rural and urban areas of Wardha district, to associate the knowledge regarding prevention of accidents of scholars with selected demographic variables.

This present study supported the prevention of accidents among schoolers. A study was conducted with a sample of 278 teachers of children aged between 3 and 11 years in North Staffordshire were sent a postal questionnaire to determine the manner and extend to which they were involved in accident prevention. Most of the teachers do not have sufficient knowledge regarding accident prevention. The majority of the respondents agreed that accident prevention was a suitable subject to be taught in schools. Guidelines on accident prevention, the role school teachers service in accident prevention, and the supervision of children during recreation periods should be needed. In this study the most rural primary school teacher do not have sufficient knowledge compare to urban primary school teachers.

A study was conducted to assess the role of primary school teachers in the prevention of accidents, A sample of 100 head-teachers of children aged between three and 10 years in Staff were sent a postal questionnaire to determine the manner and extent to which they were involved in accident prevention. The majority of respondents agreed that accident prevention was a suitable subject to be taught in schools. However, a minority felt that they had enough background information or training on the subject. First-aid instruction was particularly requested. Levels of reporting and management of individual accident cases varied. Guidelines should be agreed on accident reporting, the role of the school medical service in accident prevention, and the supervision of children during recreation periods.

5. CONCLUSION

The main aim of the study was to assess the knowledge regarding the prevention of accidents of schoolers among the primary school teacher

of the selected rural and urban areas of Wardha district.

After the completion of the study, it is revealed that most rural primary school teachers do not have sufficient knowledge regarding the prevention of accidents of schoolers compare to the urban primary school teachers. It needs intervention through educational programmes or handouts.

6. RECOMMENDATIONS

Based on the findings of the study it is recommended that the following studies can be conducted:-

- A similar study on a large scale including rural areas across the country can be carried out to estimate the level of knowledge regarding the prevention of accidents of schoolers.
- A similar study on a large scale including urban areas across the country can be carried out to estimate the level of knowledge regarding the prevention of accidents of schoolers.
- A study can be conducted to evaluate the effectiveness of a planned teaching program for the prevention of accidents among schoolers.
- A study can be undertaken with a large sample size to assess the level of knowledge and for the generalization of findings.

ETHICAL APPROVAL

The study was started after obtaining permission Ref. no: DMIMS(DU)/IEC/2016-17/6054 from the Institutional Ethics Committee (IEC), Datta Meghe Institute of medical sciences (Deemed to be University) Sawangi (Meghe), Wardha.

CONSENT

Before the induction of the study participants - consent was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ball DJ. Playgrounds-risks, benefits and choices. HSE Books; 2002.
2. Oliver TI, McFarlane JP, Haigh JC, Cant GM, Bodie AM, Lawson JS. Playground equipment and accidents. Journal of Paediatrics and Child Health. 1981 Jun;17(2):100-3.
3. Courtney TK, Sorock GS, Manning DP, Collins JW, Holbein-Jenny MA. Occupational slip, trip, and fall-related injuries can the contribution of slipperiness be isolated?. Ergonomics. 2001 Oct 1;44(13):1118-37.
4. Veevers JE, Gee EM. Playing it safe: Accident mortality and gender roles. Sociological Focus. 1986 Oct 1:349-60.
5. Reiss ML, Shinder A. School trip safety and urban play areas. A survey of the characteristics of the urban play street. United States. Federal Highway Administration. Offices of Research and Development. 1975 Nov 1;3.
6. Hull RW, Knebel GW. Statistical Summary of School Bus Accident Data.
7. Lundy L. 'Voice'is not enough: conceptualising Article 12 of the United Nations Convention on the Rights of the Child. British Educational Research Journal. 2007;33(6):927-942.
8. Winston FK, Kassam-Adams N, Vivarelli-O'Neill C, Ford J, Newman E, Baxt C, Stafford P, Cnaan A. Acute stress disorder symptoms in children and their parents after pediatric traffic injury. Pediatrics. 2002;109(6):e90-e90.
9. Cunningham RM, Walton MA, Carter PM. The major causes of death in children and adolescents in the United States. New England Journal of Medicine. 2018;379(25):2468-2475.
10. Bartlett SN. The problem of children's injuries in low-income countries: a review. Health Policy and Planning. 2002;17(1):1-13.

11. Peden M, Scurfield R, Sleet D, Hyder AA, Mathers C, Jarawan E, Hyder AA, Mohan D, Jarawan E. World report on road traffic injury prevention. World Health Organization; 2004.

12. Peters SJ. Inclusive education: An EFA strategy for all children. Washington, DC: World Bank, Human Development Network; 2004.

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