



Assessment of Knowledge, Attitude, and Practice of First Aid, and associated factors, among Kindergarten Teachers

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ABSTRACT:

Background: Injuries are very common now a day and can occur at any point of time in a day to day life. Among them, injuries in school children rank a major part. The objective of this research to evaluate knowledge, attitude and practice towards first aid and factors associated among kindergarten teachers.

Methods: Institutions based cross-sectional quantitative study design was employed. The study was conducted in Bahir dar town, Amhara region, Ethiopia from March to May 2017. A Pre-tested and structured questionnaire was used to collect data. Binary and multivariate logistic regression analysis was used to determine the separate and confounding effect for variables.

Result: A total of 173 respondents were interviewed with a response rate of 93%. From the total respondents 97 (56.1%) scored above mean for knowledge question, In particular, subjects lacked knowledge regarding first aid for Human/animal bite (60.1%) was not answered correctly. Regarding practice out of all respondents, 128(74%) had faced the child in need of first aid. About attitude, all respondents (100%) felt good attitude towards giving and learning first aid. Service year (AOR=8.6, 95%CI0.035-0.399) and previous first aid training (AOR=2.5, 95%CI 1.138-5.570) were found to have a significant association with knowledge of first aid.

Conclusion: The knowledge of kindergarten teachers towards first aid were found to be low while they have the good attitude towards giving first aid and receiving training on first aid. It remains necessary to increase their actual first aid knowledge and skills.

Key words: First aid, knowledge, attitude, practice and kindergarten

INTRODUCTION

It is compulsory, by law, that all companies should be organized and have their human resource trained in the first aid, in order to allow an effective intervention in this area. Rapid action after an accident can save the life of a person or prevent the lessons which were

suffered from getting worse (1). At work, injuries and infections kill more than million people in the world each year. These show that more than two deaths occurred every minute or thousand people a day. Implementation Safety practices and creating of good environment at work, home and play can prevent many injuries, illnesses, disease,

and death (2). This is why it is important to have at least a basic awareness of first aid. First aid is defined as the assessment and interventions that can be performed by a bystander immediately with minimal or no medical equipment (3). This one is a common incidence that on each occurrence an accident happens or every person gets injured, people around the injured person commonly become anxiety more than the victim himself. This should not be the case. The first givers must have a helpful attitude and be ready to help the casualty. The first giver should also have the acceptable knowledge and skills about what he is doing, and be inspiring and comforting to the victims(4). First giver is the immediate care given to victims of accidents before medical professionals arrive. It includes self-help and home care if medical assistance is not available or is delayed. It also includes carefully chosen words of encouragement, the indication of readiness to help, and preferment of self-assurance by demonstration of skill. Its aim is to stopover and, if possible, reverses harm. It encompasses quick and simple actions such as clearing the air passageway, applying pressure to bleeding wounds or dousing chemical burns to the eyes or skin (5). First aid can be provided in all the areas like schools, household, workplace, and recreational areas etc. Beyond health matters, first aid knowledge also increases the social responsibility of the society and strengthens values (6). the First giver is workers on the spot, usually, personnel who are familiar with the detailed circumstances of work, and who might not be competent medically but must be skilled and ready to perform very specific tasks. First aid operation also provides with understanding and ability to give life support and other emergency care and also helps you to develop safety awareness and habits that promote safety at home, at work, during recreation, and on the streets and highways (7).

Likewise, while school is being established there must have the following minimum requirements such as one person who is trained first aider and two emergencies first aider; Therefore to ensure that suitable and sufficient standard of first aid those persons should present in the regular base (8). Injuries are very common now a day and can occur at any point in time in the day to day life. Among them, injuries in school children rank a major part. The most frequent causes of school-related injuries requiring hospitalization are falls and sports activities. Playground equipment-related injuries occur on the school playground during school hours and these require adequate supervision (5). Children occupy a major percentage of their day in kindergartens; therefore pediatric emergencies, for instance, the accidental physical injuries are more likely to occur in those settings. Kindergartens are the best place to give care to those children in absence of mothers (9, 10). Kindergartens teacher has the crucial role in caring for children, supervision, and prevention of health hazards. The First giver must be well trained on first aid and emergency control to save children lives and the first aider should have adequate knowledge and skills about what is he doing and be encouraging and reassuring to the victims (11). Subsequently the study focuses on teachers' knowledge, attitude, practice and factors associated with knowledge of first aid at kindergartens the result will help as baseline information for the school, by evaluating the KAP of the teacher toward first aid and its associated factors, The teachers will be able to know their KAP status and to put their effort on it, The kids also will be benefited while their teachers identify the gap in KAP and attempt to improve it.

METHODS

Study design and setting

Institutions based cross sectional quantitative study design were employed to assess

Knowledge, Attitude, and among Kindergarten Teachers and factors associated from a total of 48 kindergartens schools found in Bahir dar town, from March to May 2017. Which is capital city of Amhara National Regional State and 565 Km from Addis Ababa It was located at 11o 38' latitude and at 37 o10' East longitudes at 1801 m above sea level. The town occupies a total area of 28Sq.Km2 which comprises 9 Sub-cities in which encompasses 17 kebele. Bahir Dar is one of the tourist destinations and fast growing town in the country

$$n = \frac{(Z\alpha/2)^2 P (P1-P)}{d^2}$$

Where;

n = minimum sample size required for the study.

Z = standard normal distribution (Z = 1.96), CI of 95%.

P = Prevalence of knowledge and practice of health professionals about zinc as a diarrheal treatment was P=50% No previous study conducted in Ethiopia.

d = Absolute precision or tolerable margin of error d= 5% (0.05).

$$n = \frac{(1.96)^2 0.5(1-0.5)}{(0.05)^2} = 384$$

While the source population was less than 10,000, finite correction formula was applied $n = \frac{n}{1+n/N}$ and the calculated final sample size were 169. By adding 10% non-respondent rate the total sample size is 186.

Sampling procedure

Among 48 kindergartens in Bahir Dar town, 29 were selected by taking 60% of total schools to meet sample size. Then the schools were stratified according to their type i.e. government, private, and the number of schools were allocated proportionally. Finally, Cluster sampling method was used to collect information from all teachers in randomly selected schools. The Sample size was

determined using the formula for a single population proportion the calculated final sample size was 186 participants.

Data Collection and Analysis

The pretest and structured questionnaires used to collect the data. The questionnaires and checklists were first prepared in English and the English version of the questionnaire was translated to local language [Amharic] and translated back to English by persons who are language professionals to keep up its consistency for real data collection. The questionnaire comprised socio-demography, knowledge, attitude, and practice of first aid and factor associated. Data were checked, coded, and entered to Statistical Package for the Social Sciences (SPSS) version 20 and analysis were made by using Bivariate and multivariate logistic regression. Bivariate analysis using for each variable to know their significance with outcome variable and multivariate analysis was done for those variables which have cut point p-value < 0.2 in the bivariate analysis to control confounding effect and determination of the relationship between associated factors and knowledge and practice of first aid. Results were displayed using frequency tables in numbers, percentage, pie chart and bar graph. Odds ratio (OR) with 95% confidence interval was used to measure the strength of association and statistical significance was declared at p-value <0.05 to find the effect of factors on the outcome variable of first aid knowledge.

Ethical approval

Ethical clearance was obtained from Debertabor University, College of Health Science, Department of Nursing And Midwifery, Research Review Board Committee and an official letter was written to Bahir dar town Education bureau, and permission will be obtained from Bahir Dar town education bureau. The entire study subject was informed about the objective, benefits, and harms of

participation in the study, and obtains their verbal consent before conducting data collection. They informed also have full rights of participating or not participating in the study; Confidentiality and privacy were ensured from all data collectors and principal investigator’s side via using code numbers than names and keeping questionnaires locked.

Result

A total of 173 respondents were interviewed with a response rate of 93%. The majority of study participants 164 (94.8%) were females. The mean age of respondents was 29.4 (with

standard deviation ±6) years. Among surveyed respondents, 92 (53.2%) were married. The study has analyzed the maximum qualification of academic staffs. Accordingly, 78 (45.1%) with Diploma, Concerning the service experience of Kindergarten teachers 88 (50.9%) had served for less than five years; Ninety-two (53.2%), of respondents, were from private. Out of 173 respondents, only 53 (30.6%) had previous first aid training.

Socio-demographic characteristics of respondents

Table 1: Socio –demographic characteristics of respondents of kindergarten teachers in Bahir dar city administration 2017.

Variable	Frequency	Percent
Sex=173		
Male	9	5.2
Female	164	94.8
Age=173		
18-24	42	24.3
25-29	55	31.8
30-34	48	27.7
>34	28	16.2
Level of Education=173		
Certificate	59	34.1
Diploma	78	45.1
Degree	36	20.8
Service years=173		
<5	88	50.9
5-10	61	35.2
>10	24	13.9
Marital status-173		
Single	72	41.6
Married	92	53.2
Divorced	9	5.2
Type of school=173		
Government	29	16.8
Private	92	53.1
Public/NGO	52	30.1
Previous training on first Aid (n=173)		
Yes	53	30.6
No	120	69.4

Knowledge of Kindergarten teachers on first aid

From the total 173 respondents, all 173 (100%) had ever heard about first Aid word by a minimum one or more than one choose stated on the questionnaire. All respondents had ever heard the word first aid. The highest source of information were Sixty-six 66 (38.2%) health professionals and thirty-seven 37(21.4%) were Media. Among the study participants majority of respondents, 167 (86.1%) answered bleeding required first Aid.

Table 2: Respondents’ response for cases requiring first aid in Bahir Dar city administration, 2017

Need first Aid n=173	Frequency	Percentage
Bleeding	159	92
Fracture	102	53
Epilepsy	51	30
Burning	125	72
Nose Bleeding	142	82
Chocking	118	68
Neck and back injury	27	15
Fainting	123	71
Swallowed poison	93	54
Breathing difficulty	64	37
Human/animal bite	38	22

From the total respondents 97 (56.1%) scored above mean for knowledge question and almost near to half 76 (43.9%) scored under mean In particular, subjects lacked knowledge regarding first aid for Human/animal bite (60.1%) was not answered correctly, epilepsy (42.8%) was not answered correctly, choking (34.2%), and back and neck injury (32.9%).

Table 3: Respondents’ answers frequency and Percent for specific questions for knowledge assessment in Bahir Dar city administration, 2017

Questions	Yes		No	
	Frequency	Percent	Frequency	Percent
First aid measure to stop bleeding from the body	170	98.3	3	1.7
First aid measures for fainting child	121	69.9	52	30.1
First aid measures for epileptic child	99	57.2	74	42.8
First aid measure for choking child	114	69.5	59	34.1
First aid Measure of for child with neck and back injury	116	67.1	57	32.9
First aid Measure for human bite	69	39.9	104	60.1
First aid measures for nose bleed/epistaxis	123	71.1	50	28.9
First aid measure for the child with difficulty of breathing	111	64.2	62	35.8

Practice of kindergarten teachers on first aid

Out of all respondents, 128(74%) had faced the child in need of first aid. From the respondents 45(26%) those had ever faced a child in need of first aid, among the respondents those had faced the child in need of first aid 129 (74.6%) of them had given first aid. From respondents those had faced a child in need of first aid, 52 (30.1%) of respondents faced a child with difficulty of breathing.

Out of fifty two who faced child with breathing difficulty, 35(67%) replied that they contacted responsible school authority and parent 33(63.5%) encourage the child to calm down and sit quietly and 72(41.6) had faced child with fainting from this Forty-eight (66.7%) of respondents contacted responsible body. One Hundred fifty-nine (91.9%) participants faced a child with epistaxis (nosebleed) among these One hundred one (63.5%) placed student sitting comfortably with slightly forward. One Hundred five (60.7%) of respondents faced a child with bleeding on the body. Out of this 88 (83.8%) pressed firmly with a clean bandage to stop bleeding. About 70 (40.5%) respondents faced a child with epilepsy; from these Thirty-five (50%) contacted the responsible body. About 84 (48.6%) of respondents faced a child with choking out of this Forty-nine (58.3.0%) checked for choking. Twenty (11.6%) of respondents faced a child with neck and back injury and 15(75%) of them contacted a responsible body.

Table 4: Frequency and Percent of practice of kindergarten teachers on first aid in Bahir Dar city Administration, 2017

Variable for practice	Frequency	Percent
Faced a child with in need of first aid n=194		
Yes	128	74
No	45	26
Total	173	100
Given first Aid n=173		
Yes	129	76.6
No	44	25.4
Total	173	100
Child with difficulty of breathing n=52		
Called ambulance	9	5.2
Encouraged the student to sit quietly	33	19.1
Breathe slowly and deeply	15	8.7
Contacted responsible school authority and parent	35	20.2
Child with fainting n= 73		
Called EMS/Ambulance	8	4.6
Kept student on flat position	40	23.1
Loosen clothing around the neck and waist	20	11.6
Kept air way clear and monitored breathing	10	5.8
Gave nothing by mouth	13	7.5
Contacted responsible school authority and parent	48	27.7
Nose bleeding/epistaxis n=159		
Called EMS/Ambulance	10	5.8
Placed student sitting comfortably with slightly forward	101	58.4
Laid on side with head raised on pillow	33	19.1
Applied uninterrupted pressure by pressing nostrils together	60	34.7
Applied ice to nose	31	17.9
Contacted responsible school authority and parent	89	51.4
Bleeding on child’s body n=105		
Called EMS/Ambulance	9	5.2
Pressed firmly with clean bandage to stop bleeding	88	50.9
Elevated bleeding body part gently	30	17.3

Bandaged bleeding wound without interfering circulation	48	27.7
Covered student with blanket	13	7.5
Contacted responsible school authority and parent	74	42.8
Child with seizure/epilepsy n=70		
Called EMS/Ambulance	13	7.5
Left the child for free movement	33	19.1
Moved surrounding objects to avoid injury	26	15
Avoided giving any drink/food by mouth	34	19.7
Kept air way clear by placing the child on the side	15	8.7
Contacted responsible school authority and parent	35	20.2
Child with choking n=84		
Called EMS/Ambulance	6	3.5
Checked for choking	49	28.3
Stood behind the child encircling the child's chest by hands and squeezed	34	19.7
Continued until the object expelled	24	13.9
Contacted responsible school authority and parent	40	23.1
Child with injured neck and back n=20		
Called EMS/ambulance	8	4.6
Checked child's position immediately	4	2.3
Laid the child and restrict moving unless harm exacerbated if the students stayed there	7	4
Avoided head and neck movement and kept body straight	7	4
Contacted responsible school authority and parent	15	8.7

Attitude of kindergarten teachers towards first aid

All respondents, (100%) touched good attitude towards giving and learning first aid. Most of the respondents, 138 (79.8%) strongly agreed and 35(20.2%) agreed that giving first aid is fair. Eighty Percent of respondents strongly agreed that it is useful to learn first aid for them and few respondents 4(2.3%) and 2(1.2%) strongly agreed that it is useful to learn first Aid and it is Important to learn first Aid respectively.

Table 5: Frequency and Percent of respondents' response for attitude questions in Bahir dar city administration, 2017

Attitudes towards Giving First Aid	Strongly agree N/%	Agree N/%	Disagree N/%	Strongly disagree N/%
Giving first aid at school is fair	138(79.8%)	35(20.2%)	0	0
Giving first aid at school is unpleasant	0	0	73(42.2%)	100(57.8%)
Giving first aid is very good	135(78%)	38(22%)	0	0
Attitudes towards learning first aid				
It is good for me to learn first aid	139(80.3%)	34(19.7%)	0	0
It is useful for me to learn first aid	132(76.3%)	37(21.4%)	0	4(2.3%)
It is important for me to learn first aid	115(66.5%)	56(32.4%)	0	2(1.2%)

Factors affecting knowledge and practices of kindergarten teachers about first aid

All Variables which have cut point p-value< 0.2 with Knowledge of First Aid among Kindergarten Teachers in the Bivariate analysis were selected and entered multivariate logistic regression analysis

to identify the most important predictors of Knowledge and practices of First Aid among Kindergarten Teachers. These variables were age, service year, level of education, type of school and previous first aid training all of this was strongly associated with Knowledge and practices of First Aid. From these only service year and previous first aid training were found to have a significant association with knowledge of first aid at 95% CI with a P-value of <0.05

Table 6: Binary and multiple logistic regression analysis of selected factors affecting knowledge of first aid among kindergarten teachers in Bahir dar city administration

Variable	Knowledge		COR(95CI)	AOR(95CI)	P=Value
	knowledgeable	Not knowledgeable			
Age					
20-24	26	16	1	1	
25-29	27	28	0.770 (0.281,2.11)	1.140(0.229,5.668)	0.873
30-34	25	23	0.457(0.176,1.185)	1.044(0.253,4.305)	0.953
>34	19	9	0.515(0.194,1.364)	1.444(0.358,5.821)	0.605
Service years					
<5 years	54	34	1	1	
5-10 years	23	38	3.14(0.100,1.00)	2.9(0.108,1.117)	
>10 years	20	4	8.3(0.039,0.399)	8.6(0.035,0.399)	0.001
Previous first aid training					
Yes	30	13	1	1	
NO	67	63	2,17(1.039,4.530)	2.52(1.138,5.570)	0.023

Assessment of kindergarten schools’ setting for first aid provision

Out of total participants, 139 (80.3%) responded that there is a trained person to give first aid in their school. Eighty-three (48%) of them were teachers while 34 (19.7%) of them are health professionals. One hundred five (60.7%) of respondents replied that they have first aid room and about 93 (53.8%) of them said there is first aid kit in their school. About 64(37%) of respondents said that there is a link between school and health institutions to refer in case the child gets injured.

DISCUSSION

Children spend their major part of a day in schools along with their peers and teachers. They are at larger risk of injuries and emergencies due to the higher level of involvement in sports and extracurricular

activities. School teachers acting as the guardians of these students as long as they are in the school need to be equipped with the adequate knowledge regarding first aid practices. In this study, an attempt was made to explore the knowledge of school teachers in first aid and what actually they practice at the incident requiring first aid.

In this study, it was observed that 100% of school teachers had ever heard of the terminology first aid. This is quite a satisfactory response but when an inquiry was made in-depth regarding the actual knowledge they were found to be largely inadequate. This implies that even though teachers are briefly introduced about first aid but they will not have a detailed knowledge about it. This study shows that the knowledge of kindergarten teachers on first aid is low with only 53.1% of respondents scored above mean for

knowledge questions. The result is in line with the study done in Egypt, in which the mean score of the respondents is found to be low (12). Prior studies regarding the knowledge of first aid knowledge among kindergarten teacher staffs have been scarce.

In particular, subjects lacked knowledge regarding first aid for epilepsy (only 40.5% answered correctly), and choking (48.6%). This is similar when compared to the study done in China (13). As the study shows, 69.4% of respondents had no previous first aid training which is lower than the study conducted in Midwestern, USA, in which one-third of respondents had no previous training. This may be due to the accessibility of training in developed countries (14). The poor knowledge in the present study can be attributed to the fact that very little importance given by school functionaries and administration towards the training of school teachers on first aid. This may also be explained by the fact that the majority of studied teachers did not attend any training courses in first aid.

Most respondents agreed that giving first aid was helpful; the vast majority felt that it was important and useful for them to learn first. This result is similar to the study conducted in Shanghai, China, in which the majority of the participants felt the importance of providing first aid and learning first aid (13).

Teachers with the previous first aid training are 2.52 times more likely knowledgeable when compared to those had no training ($p=0.023$, AOR: 2.52, 95% CI: 1.138, 5.57). Similarly, a study in China revealed a significant association between previous first aid training and knowledge ($p=0.012$) (13). Teachers those have been teaching for more than ten years are more likely to have knowledge about first aid ($p=0.001$, AOR: 8.6, 95% CI: 0.035, 0.389) this may be due to Teachers got training irregularly and interruptedly.

Strength and limitations of this study

- This is the first institutional based, cross-sectional study in Bahir Dar city administration, North-West Ethiopia, which is assessed knowledge, attitude, and practices of first aid among kindergarten teachers.
- The study will Give baseline information about knowledge, attitude and practice of first aid for further study
- As this study was cross-sectional, the factors do not establish temporal relationship; therefore, extrapolation of causation is not possible.

Conclusion

The knowledge of kindergarten teachers towards first aid is found to be low while they have good attitude towards giving first aid and receiving training on first aid. It remains necessary to increase their actual first aid knowledge and skills. As the study shows there is a lack of first aid training among kindergarten teachers. Teaching first aid offers an opportunity to educate teachers about risk factors for specific injuries. Identification and actions taken to decrease risk delivered together with first aid training may decrease the overall rate of child injury. It also shows that they are concerned in obtaining proper training. As the study shows there is first aid room and first aid kit in some kindergarten schools. Both ministry of health and education better to work more closely than ever first aid practice.

Author's Contribution

AB, was involved in preparing the research proposal, data analysis and research report, and revision of the manuscript.

AA, conceptualized the research problem, designed the study, conducted field work, collected data, data analysis and drafted the manuscript.

AS, was involved in preparing the research proposal, data analysis and research report, and revision of the manuscript.

Conflict of interest: we declare that there are no conflicts of interest.

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