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Perception and Practice of First Aid among School Teachers in Aba, South-east, Nigeria

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Abstract
Background
School children are prone to injuries during sporting activities and other extra-curricular activities while in school. Knowledge of first aid is needed to handle emergencies in schools. Teachers are the closest adults to school children so should be properly trained and equipped to administer first aid to children. This study was conducted to determine the knowledge and practice of first aid among teachers.
Materials and Methods
Four hundred teachers who gave consent participated in the study. Study was conducted among private school teachers in Abia state, Nigeria. Simple random sampling technique was used to select participants until sample size was reached. Data was collected using pre-tested semi-structured self-administered questionnaire. Data was presented in frequency tables. Chi-square was used to test association between categorical variables. P-value of <0.05 was taken to be statistically significant.
Results
Two hundred and seven respondents (51.8%) had good knowledge of first aid while 193 (48.3%) had poor knowledge. Methods of first aid mostly knowledgeable to respondents were stopping of bleeding, administration of vitamin C and running water over bruises 278 (45.9%). The least method/procedure known to the respondents was stabilization of a broken bone 43 (7.1%), 51 (8.4%) had knowledge about cardiopulmonary resuscitation. There was a statistical significant difference between age of respondents and knowledge of first aid among respondents. Duration of work was also statistically significant with knowledge of first aid among respondents.
Conclusion
The knowledge and practice of school teachers regarding first aid is on the average requiring regular training and re-training.

Key words: *Perception, Practice, First aid, Teachers, Secondary school, Aba, Abia state.*

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I. Introduction

School as a place of learning and interaction between persons from different tribes, social class and backgrounds can pose potential risks to staff and students. Children spend 2/3rd of their time in school when in session, and are at risk of injuries and accidents from involvement in sports and other non-school activities. Therefore, emergency preparedness in schools is as important as sending children to school for knowledge acquisition. In Nigeria, over 60% of children are in school at any given time when schools are open,[1] it is therefore important to have healthy and safe learning environment for students and staff. Teachers trained on first aid and equipped to apply first aid techniques contribute to promoting safe school environment.

Medical emergencies as a result of sudden illnesses and injuries are common in schools. Injuries in schools are more common among boys than girls.[2-6] This can vary from country to country; in Tucson, AZ, USA,[7] girls were more likely to be injured at school than boys. In France, girls were involved in injuries while playing than boys,[8] whereas in Nigerian schools, boys were physically injured than girls.[9] Injuries are the commonest health problems treated by school health personnel.[10] Eighty percent of elementary school children visit the school clinic for treatment of injuries from falls, collision and sports related injuries occurring in play grounds.[11] However, 10-25% injuries occur in school and are minor.[9,12,13,14] In addition to injuries, Sub-Saharan African countries have reported tropical diseases affecting children and presenting suddenly at school.[15,16] Malaria, diarrhoea, helminthiasis, cough, flu, typhoid, Scabies, STI commonly present as emergencies during school sessions. In cases of emergencies in schools, first aid (initial and immediate assistance) should be provided to preserve life, prevent the condition from worsening or to promote recovery.[17] First aid in schools can

entail treatment of minor injuries by applying pressure and plaster -to handling serious conditions requiring for instance application of cardiopulmonary resuscitation while waiting to move victim to a higher level of care. First aid is generally given by someone who has basic training in first aid with minimal or no medical equipment. [18] Certain skills are essential to the provision of first aid which require training. First aid treatment is mostly rendered in states of emergency. It is important that everyone has basic knowledge of first aid. Emergencies leading to injuries can occur at any place; home, school, highway, workplace, public gathering. At such point, people at the scene should administer first aid as first responders before arrival of an ambulance or medical experts. First responders are persons who attend to emergency victims by administering first aid. The first responders in schools usually are teachers, and therefore must be able to deal with emergencies in students and other staff. Sadly, previous studies reveal inadequate knowledge of first aid among teachers.[19-22] Many schools in Nigeria are not equipped in terms of trained personnel and equipment to handle first aid during emergencies.[23,24] Nigeria's school health policy has as part of its objectives the training of teachers on first aid and provision of basic services for disease prevention and management of injuries.[25] The level of compliance to this policy is important in ensuring schools are safe for learning and other extra-curricular activities.

This study was therefore carried out to ascertain the perception and practice of first aid among school teachers in Aba, South-east Nigeria. This study identified some factors affecting the practice of first aid in Nigeria schools. It also gives insight into the level of compliance to the school health policy document of 2006.

II. Materials And Methods

This was a descriptive cross-sectional study conducted from January to March 2020 among private secondary school teachers in Aba, Abia state, South-east Nigeria. Aba is the largest city in Abia State, Nigeria. It is located on 5.11 latitude and 7.37 longitude and it is situated at elevation 64 meters above sea level. Aba has a population of about 897,560 making it the most populated city in Abia State.[26] It is a major urban settlement and a commercial center in a region that is surrounded by small villages and towns. Its residents are made up of civil servants, business people, farmers and students, although majority of the residents are traders while the minority engage in vocations such as civil service, commercial bus driving, tailoring, shoe making, farming, patent medicine, employees of private organizations like schools, banks, hospitals etc. Aba has a mix of private and public schools. Public schools are owned and managed by the government whereas private schools are owned by individuals and missionaries.

Study Design: Descriptive cross-sectional study

Study Location: This study was carried out in private schools in Aba. Private schools who have approval to operate were included in the study while those without government approval were excluded.

Study Duration: January 2020 to March 2020

Sample size: 400 teachers

Sample size determination

The sample size was determined using the formula

$n=Z^2P^2q/d^2$

Where

n= minimum sample size
Z= standard normal derivative (1.96)
P = proportion of desired attribute
q = 1-P
d = desired level of precision (0.05)

And

Z =1.96
P = 50%
q = 1-P = 0.5

d =0.05

Therefore ; $N = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$

$= (0.9604/0.0025)$

$= 384.16$

Sample size was rounded up to 400 after adjusting to attrition and loss to follow-up.

Subjects and selection method

Participating schools were selected based on having government approval to function as private schools. A total of 20 private schools participated in the study. Simple random sampling was used to select 20 teachers from each school who gave consent to be part of the study.

Data was collected using pre-tested semi-structured self-administered questionnaire.

Statistical analysis

Data collected was analysed using SPSS software version 21.0. Data is presented in frequency tables. Chi-square was used to test association between categorical variables. P-value of <0.05 was taken to be statistically significant.

Ethical consideration

Informed consent of this study was obtained from the Department of Community medicine, Abia State University Teaching Hospital, Aba. Informed consent was obtained from the school principals of the various schools visited. The participants were briefed on the objectives of the study and thereafter their consent obtained prior to start of the study.

III. Results

Four hundred respondents participated in the study. Majority of the respondents, 102(25.5%) were in 26-30years age group, 29 (7.3%) were in 36-40 years of age, 89 (22.3%) of the respondents belonged to the youngest age group of less than 25 years. Those 41-45years and greater than 45years had same number of representation, 50 (12.5%) each. There were 155 (38.8%) males and 245 (61.3%) females who participated in this study. One hundred and fifty-two (38.0%) respondents were single, 239 (59.8%) married while 4(1%) and 5 (1.3%) were widowed and divorced respectively. Most of the participants 323 (80.8%) had university education, 31 (7.8%) had secondary education, 35 (8.8%) diploma certificate, 9 (2.3%) had post-tertiary education while only 2 (0.5%) had primary education. One hundred and ninety-three (48.3%) of the participants had worked for five years or less, 133 (33.3%) worked for 6-10years, while the least number of years of work was more than 30 years, 6 (1.5%). Sources of information were from health professionals 168 (35.8%), social media 68(14,5%), health institutions 126 (26.9%), family 33(7.0%), books 67 (14.3%) and colleagues 7 (1.5%). Methods of first aid mostly knowledgeable to respondents were stopping of bleeding, administration of vitamin C and running water over bruises 278 (45.9%). The least method/procedure known to the respondents was stabilization of a broken bone 43 (7.1%), 51 (8.4%) had knowledge about cardiopulmonary resuscitation (CPR). Two hundred and seven respondents (51.8%) had good knowledge of first aid while 193 (48.3%) had poor knowledge. One hundred and fifty-four (38.5%) have been trained on first aid while 246 (61.5%) respondents hadn't any training on first aid. Majority of the respondents 324 (81.0%) had access to first aid materials whereas 76 (19.0%) of the respondents did not have access to first aid materials. There was statistical significant difference between age of respondents and knowledge of first aid among the respondents. Duration of work was also statistically significant with knowledge of first aid among respondents. Sex, marital status and level of education were not statistically significant. Majority of the respondents 225 (56.3%) had poor practice score on first aid while 175 (43.8%) had good practice score on first aid.

Table 1: shows socio-demographic characteristics of respondents. Majority of the respondents, 102(25.5%) were in 26-30years age group, 29 (7.3%) were in 36-40 years of age, 89 (22.3%) of the respondents belonged to the youngest age group of less than 25 years. Those 41-45years and greater than 45years had same number of representation, 50 (12.5%) each. There were 155 (38.8%) males and 245 (61.3%) females who participated in this study. One hundred and fifty-two (38.0%) respondents were single, 239 (59.8%) married while 4(1%) and 5 (1.3%) were widowed and divorced respectively. Most of the participants 323 (80.8%) had university education, 31 (7.8%) had secondary education, 35 (8.8%) diploma certificate, 9 (2.3%) had post-tertiary education while only 2 (0.5%) had primary education. One hundred and ninety-three (48.3%) of the participants had worked for five years or less, 133 (33.3%) worked for 6-10years, while the least number of years of work was more than 30 years, 6 (1.5%).

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency	Percentage (%)
Age (Years)		
< 25	89	22.3
26 – 30	102	25.5
31 – 35	80	20.0
36 – 40	29	7.3
41 – 45	50	12.5
>45	50	12.5
Total	400	100.0
Sex		
Male	155	38.8
Female	245	61.3
Total	400	100.0
Marital status		
Single	152	38.0
Married	239	59.8

Widowed	4	1.0
Divorced	5	1.3
Total	400	100.0
Level of Education		
Primary	2	0.5
Secondary	31	7.8
Diploma	35	8.8
University	323	80.8
Post – tertiary	9	2.3
Total	400	100.0
Duration of work (Years)		
< 5	193	48.3
6 – 10	133	33.3
11 – 15	7	1.8
16 – 20	32	8.0
21 – 25	17	4.3
26 – 30	12	3
>30	6	1.5
Total	400	100.0

Table 2: shows knowledge of respondents on first aid. Sources of information were from health professionals 168 (35.8%), social media 68(14,5%), health institutions 126 (26.9%), family 33(7.0%), books 67 (14.3%) and colleagues 7 (1.5%). Methods of first aid mostly knowledgeable to respondents were stopping of bleeding, administration of vitamin C and running water over bruises 278 (45.9%). The least method/procedure known to the respondents was stabilization of a broken bone 43 (7.1%), 51 (8.4%) had knowledge about cardiopulmonary resuscitation (CPR).

Table 2: Knowledge of respondents on first aid

Variable	Frequency	Percentage (%)
Sources of information		
Health professional	168	35.8
Social media	68	14.5
Health institutions	126	26.9
Family	33	7.0
Books	67	14.3
Colleagues	7	1.5
Methods of first aid		
Stopping of bleeding	278	45.9
Cardiopulmonary resuscitation	51	8.4
Use of ice cubes	106	17.5
Stabilizing a broken bone	43	7.1
Administering analgesics	101	16.7
Administering anti-emetics	101	16.7
Administering vitamin c	278	45.9
Running water over bruises	278	45.9

Table 3: This shows knowledge score of respondents. Two hundred and seven respondents (51.8%) had good knowledge of first aid while 193 (48.3%) had poor knowledge.

Table 3: Knowledge score of respondents

Variable	Frequency	Percentage (%)
Good knowledge	207	51.8
Poor knowledge	193	48.3
Total	400	100.0

Table 4: shows result of training on first aid among respondents. One hundred and fifty-four (38.5%) have been trained on first aid while 246 (61.5%) respondents hadn't any training on first aid. Majority of the respondents 324 (81.0%) had access to first aid materials whereas 76 (19.0%) of the respondents did not have access to first aid materials.

Table 4: Training on first aid among respondents

Variable	Frequency	Percentage (%)
Had any training on first aid		
Yes	154	38.5
No	246	61.5
Total	400	100.0
Time of training (Years)		

None	246	61.5
< 2	20	5.0
3 – 7	110	27.5
8 – 12	2	0.5
>12	22	5.5
Total	400	100.0
Access to first aid materials/tools kit		
Yes	324	810.0
No	76	19.0
Total	400	100.0

Table 5: shows association between socio-demographic characteristics and knowledge of respondents regarding first aid. There was statistical significant difference between age of respondents and knowledge of first aid among the respondents. Duration of work was also statistically significant with knowledge of first aid among respondents. Sex, marital status and level of education were not statistically significant.

Table 5: Association between socio – demographic characteristics and knowledge of first aid

Variable	Knowledgeable (%)	Not knowledgeable	Chi – square	P – value
Age (Years)				
< 25	40 (44.9)	49 (55.1)		
26 – 30	40 (39.2)	62 (60.8)	129.818	0.001
31 – 35	38 (47.5)	42 (52.5)		
36 – 40	29 (100.0)	0 (0.0)		
41 – 45	0 (0.0)	50 (100.0)		
>45	50 (100.0)	0 (0.0)		
Sex				
Male	71 (45.8)	84 (54.2)	3.580	0.058
Female	136 (55.5)	109 (44.5)		
Marital status				
Single	84 (55.3)	68 (44.7)		
Married	121 (48.6)	118 (47.4)	4.105	0.250
Widowed	1 (25.0)	3 (75.0)		
Divorced	1 (20.0)	4 (80.0)		
Level of Education				
Primary	0 (0.0)	2 (100.0)		
Secondary	12 (38.7)	19 (61.3)		
Diploma	22 (62.9)	13 (37.1)	6.220	0.183
University	169 (52.3)	154 (47.7)		
Post – tertiary	4 (44.4)	5 (55.6)		
Duration of work (Years)				
< 5	124 (64.2)	69 (35.8)		
6 – 10	40 (30.1)	93 (69.9)		
11 – 15	2 (28.6)	5 (71.4)	53.717	0.001
16 – 20	19 (59.4)	13 (40.6)		
21 – 25	16 (94.1)	1 (5.9)		
26 – 30	6 (50.0)	6 (50.0)		
>30	0 (0.0)	2 (100.0)		

Table 6: shows practice score of the respondents. Majority of the respondents 225 (56.3%) had poor practice score on first aid while 175 (43.8%) had good practice score on first aid

Table 6: Practice score of respondents

Variable	Frequency	Percentage (%)
Good practice	175	43.8
Poor practice	225	56.3
Total	400	100.0

Table 7: Reasons for poor practice of first aid among respondents

Variable	Frequency	Percentage (%)
Lack of first and materials	150	27.4
Inadequately training	135	24.6
Poor motivation	116	21.2
No ambulances	103	23.7
No government regulation	215	53.8

IV. Discussion

This study was carried out among private secondary school teachers in Aba, Abia state, South-east Nigeria. Private schools for purposes of this study are schools owned and managed by individuals, groups or missionary. These schools are not owned by Government in other words are not public schools. This current showed that 51.8% of the teachers that participated in this study had good knowledge of first aid. This finding is higher than studies carried out in Saudi Arabia and Nigeria.[26,27] The knowledge gap might be attributed to this study conducted among teachers in private schools. It is assumed that private schools have higher learning standards than public schools and thus should have better qualified teachers than public schools. The methods of first aid most knowledgeable to the teachers were stopping of bleeding, administration of analgesics and vitamin C. These were commonly given after sports' injuries. This finding is similar to previous studies[26,27] were teachers were comfortable handling injuries resulting from sports. Injuries sustained during sports or other extracurricular activities are not the only emergencies seen in schools. Others like respiratory emergencies also occur among children and/or staff. In this study, only 8% of the teachers had knowledge on performing basic life support in cases of respiratory emergencies. This is worrisome as respiratory distress/failure have been reported as the leading cause of cardiac arrests in children.[28] This finding is similar to previous studies reporting inadequate knowledge of basic life support and cardio pulmonary resuscitation among teachers.[29] Health professionals were reported as the commonest source of information regarding first aid. This is in contrast to an Iranian study[22] which reported books and media as the commonest sources of information. Sources of information are important so long as they are correct and can be applied correctly. Only 154 (38.5%) of the respondents in this study have had any training on first aid. Previous study in Turkey[30] revealed that teachers had some form of training on first aid. Teachers interviewed in this current study had access to first aid boxes (81.0%). However further questions revealed that the first aid boxes were not adequately equipped. The contents of the first aid boxes were mostly bandages, methylated spirits, vitamin c, paracetamol and gentian violet. This might explain the finding in this study of a higher knowledge on how to handle bleeding as the commonest first aid method known to the teachers. There is a possibility that availability of equipment to handle other emergencies might improve knowledge of teachers on more principles and methods of first aid. Further studies should investigate the effect of provision of fully equipped first aid boxes in schools on knowledge and practice of first aid among teachers. This present study showed that age and duration of work were statistically significant with knowledge of first aid among teachers. Older teachers had more knowledge than the younger teachers. This might be linked to years of work as this study showed teachers who have taught for 21-25 years were more knowledgeable than those 6-10 years or younger in years of teaching. Reasons given by respondents for poor practice of first aid included lack of government regulation. The respondents were of the opinion that government should enforce the law that schools are safe for students and staff. Linkages to health care facilities was a limitation to practice of first aid. There were no ambulances to evacuate emergencies to nearby hospitals. Lack of funds to procure equipment and sponsor trainings were mentioned as part of the reasons teachers had difficulty practicing first aid in schools. Parents and guardians were quickly called to pick their children and wards when such emergencies arose. This study has some limitations. There were no emergencies encountered during the course of data collection as to objectively assess the knowledge and abilities of the teachers to apply first aid. Also the results were based on teachers' responses which might be biased. However, this study has determined that there are gaps in the knowledge and practice of first aid among teachers in secondary schools.

V. Conclusion

The knowledge and practice of teachers regarding first aid was on the average having the need for training and re-training.

Competing interest

None

References

[1]. World Bank group. Schools enrolment in Nigeria. http://www.worldbankgroup.org. accessed 22/01/2021

[2]. Di Scala C, Gallagher SS, Schneps SE. Causes and outcomes of paediatric injuries occurring at school. j Sch Health 1997;67:384-9, doi:10.1111/j.1746-1561,1997.tb07182.x

[3]. Haq SM,Haq MM. Injuries at school: a review. TEX Med 1999 95:62-5

[4]. Li L-P, Wang S, Huang G, Luo J-Y. A survey on injury incidence in school children in Shantou City, China. Biomed Environ Sci 2003;16:180-6.

[5]. Sun YH,Yu IT, Wong TW, Zhang Y, Fan YP, Guo SQ. Unintentional injuries at school in China- patterns and risk factors. Acid Anal Prev 2006;38:208-14.

[6]. Sun YH, Yu IT, Zhang Y, Fan YP, Guo SQ, Wong TW. Unintentional injuries among primary and middle school students in Manshan City, eastern China. Acta Paediatr 2006; 95:268 -75.

[7]. Boyce WT, Springer LW, Sobolewski S, Schafer C. Epidemiology of injuries in a large, urban school district. Paediatrics 1984;74:342-329.

[8]. Chau N, Predine R, Aptel E, d'Houtaud A, Choquet M. School injury and gender differentials: a prospective cohort study. Eur J Epidemiol 2007;22:327-34

[9]. Samuel Adegoke, Ademola AS, Dedeke IOF, Oyelami OA. Childhood injuries in Ilesa, South-Western Nigeria: causes, pattern, and outcome. West African Journal of medicine 2010;29(4):253-8.
[10]. CDC. School Health Guidelines to Prevent Unintentional Injuries and Violence. MMWR 2001/50(RR22);1-46.
[11]. Nader PR, Brink SG. Does visiting the school health room teach appropriate or inappropriate use of health services? Am J Public Health 1981;71;416-9
[12]. Passmore DL., Gallagher SS, Guyer B. Injuries at school: epidemiology and prevention. Cambridge, MA: Harvard University School of Public Health, New England Injury Prevention Research Center, 1989. (NEIPRC Working paper series no.17)
[13]. Rivara FP, Calonge N, Thompson RS. Population-based study of unintentional injury incidence and impact during childhood. Am J Pub Health 1989;79:990-4
[14]. Scheidt PC, Harel Y, Trumble AC, Jones DH, Overpeck MD, Bijur PE. The epidemiology of nonfatal injuries among US children and youth. Am J Public Health 1995:85;932-8.
[15]. Chukwuocha UM., Ashiegbu KK., Dozie INS., Aguwa OC. The perspectives of secondary school students on common diseases and medicines used: Implications for the implementation of school based health programmes in Nigeria. Scientific Research and Essay 2009;4(11): 1403-1407.
[16]. World Health Organisation. Promoting health through schools. Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion 1997;890(1-^):1-93
[17]. First aid manual: 9th edition. Dorling Kindersley. 2009. ISBN 978-1-4053-3537-9.
[18]. Ganfure G., Ameya, A., Tamirat. First aid knowledge, attitude, practice, and associated factors among kindergarten teachers of Lideta sub-city Addis Ababa, Ethiopia. PLoS One, 2018; 13:e0194263.
[19]. Al-Samghan AS., Al-Shahrani FM., Al-Shahrani FH. Primary school teachers' knowledge about first-aid. Med J Cairo Univ, 2015;83:541-547.
[20]. Frederick K., Bixby E., Orzel MN. An evaluation of the effectiveness of the injury minimization programme for schools (IMPS). Inj Prev, 2000;6: 92-95.
[21]. Parim GA. A cross section of practicing teachers' and prospective teachers' knowledge of first aid. Int J Human Soc Sci Educ 2015;2:286-293.
[22]. Mohsen Adib-Hajbaghery, Zahra Kamrava. Iranian teachers' knowledge about first aid in the school environment. Chinese Journal of Traumatology 2019;22(4): 240-245.
[23]. Ogunkunle O., Olanrewaju D. Oyinlade O. An evaluation of school health services in Sagamu, Nigeria. Nigerian Journal of Clinical Practice 2014;17(3): 336. doi:10.4103/1119-3077.130236
[24]. Kuponiyi OT., Amoran OE.,Kuponiyi OT. School health services and its practice among public and private primary schools in Western Nigeria. BMC Research Notes. Biomed Central 2016;9(1):203. doi:10.1186/s13104-016-2006-6.
[25]. Federal Ministry of Education, Nigeria. National School Health Policy. Abuja 2016
[26]. Majed AI Gharsan, Ubrahim Alarfaj. Knowledge and practice of secondary school teachers about first aid. J Family Med Prim Care. 2019;8(5):1587-1593.
[27]. Olatosi OO, Iwuala SO, Isiekwe GI, Oredugba FA, Adenaike AS, Oluwo AO. Knowledge and attitude of some Nigerian school teachers on the emergency management of avulsed permanent incisor. Journal of the West African College of Surgeons. 2013;3(4):30-52.
[28]. Tress E., Kochanek P., Saladino R., Manole M. Cardiac arrest in children. J Emerg Trauma Shock. 2010;3:267-272.
[29]. Ojifinni K, Motara F, Laher AE. Knowledge, Attitudes and Perception Regarding Basic Life Support Among Teachers in Training. Cureus 2019;11(12):e6302.
[30]. Yurumez Y, Yavuz Y, Saglam H, Koken R, Tunay K. Evaluation of the level of knowledge of first aid and basic life support of the educators working in preschools. Acad Emerg Med J. 2007;5(3):17-20.

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