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Knowledge, Attitudes and Practices of Secondary School Teachers in Ekiti State Regarding Hospital Referral for Sports-Related Head Injuries among Students

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Abstract

Background: Sports-related head injuries among students are common and require timely recognition and hospital referral to prevent complications. Teachers often serve as first responders in school settings, especially in low-resource environments.

Objective: To assess the knowledge, attitudes, and practices of secondary school teachers in Ekiti State regarding hospital referral for sports-related head injuries.

Methods: A descriptive cross-sectional study was conducted among 342 teachers using a structured questionnaire. Knowledge, attitude, and practices (KAP) were assessed using predefined scoring systems. Data were analyzed using SPSS version 25.0, with logistic regression used to identify predictors of good referral practice.

Results: Most respondents demonstrated good knowledge of key concussion signs, including recognition of red flag symptoms (85.4%) and appropriate emergency response (88.9%). Overall, 69.6% had a positive attitude toward referral. However, only 52.0% reported frequent hospital referral practices (always/often). Common barriers included lack of training (66.7%), absence of school policy (62.0%), and transport challenges (57.3%). Predictors of good referral practice included good knowledge (AOR 2.34, p=0.001), positive attitude (AOR 1.96, p=0.005), and formal training (AOR 2.88, p<0.001).

Conclusion: While teachers demonstrated relatively good knowledge and attitudes, referral practices remain suboptimal

due to systemic and training-related barriers. Targeted training and institutional support are essential to improve outcomes.

Keywords: Head injury, Teachers, Referral, Knowledge, Nigeria.

1. Introduction

Sports-related head injuries, including concussions, are increasingly recognized as a significant public health concern among school-aged children and adolescents worldwide. These injuries commonly occur during school sports and recreational activities and may range from mild concussions to severe traumatic brain injuries (TBI). Globally, it is estimated that millions of children sustain sports-related head injuries annually, with a substantial proportion going unrecognized or inadequately managed [1, 2]. Early identification and timely referral to appropriate health facilities are critical to preventing complications such as prolonged symptoms, cognitive impairment, and, in severe cases, death [3].

A concussion is a form of mild traumatic brain injury caused by a blow to the head or body, leading to rapid onset of transient neurological dysfunction [4]. Contrary to common misconceptions, loss of consciousness does not occur in all cases, and symptoms may be subtle or delayed. Warning signs such as persistent headache, repeated vomiting, confusion, and altered consciousness indicate the need for urgent medical evaluation [5]. Failure to recognize these "red flags" can result in delayed care and increased risk of secondary brain injury, including the potentially fatal second-impact syndrome [6].

Teachers play a pivotal role in the school environment as first responders when injuries occur during sports or physical activities. In many low- and middle-income countries, including Nigeria, access to school-based health personnel such as nurses or athletic trainers is limited, making teachers the primary decision-makers regarding first aid and referral [7]. Their knowledge, attitudes, and practices (KAP) toward head injury management therefore directly influence the timeliness and appropriateness of care provided to injured students.

Evidence from high-income countries suggests that although awareness of concussion has improved, gaps persist in knowledge and adherence to return-to-play and referral guidelines among school staff [8]. In contrast, studies from the Middle East and Sub-Saharan Africa, including Nigeria, indicate even greater deficiencies, often compounded by limited training opportunities, absence of standard protocols, and inadequate resources [9, 10].

In addition to knowledge gaps, attitudinal and systemic factors such as fear of parental reactions, lack of clear referral guidelines, and logistical barriers (e.g., transportation and access to healthcare facilities) may hinder appropriate referral practices [11]. These challenges are particularly relevant in settings where school health services are underdeveloped and emergency response systems are weak.

Despite the critical role of teachers in managing school-related injuries, there is a paucity of data on their preparedness to recognize and refer students with sports-related head injuries in many parts of Nigeria, including Ekiti State. Understanding teachers' knowledge, attitudes, and practices, as well as the barriers they face, is essential for designing targeted interventions aimed at improving school health outcomes.

This study therefore aimed to assess the knowledge, attitudes, and practices of secondary school teachers in Ekiti regarding hospital referral for sports-related head injuries among students, and to identify factors associated with appropriate referral practices.

2. Methodology

2.1. Study Design and Setting

This study was a descriptive cross-sectional study conducted among secondary school teachers in Ekiti State, Southwestern Nigeria. Ekiti State is administratively divided into 16 Local Government Areas (LGAs) and has a mix of public and private secondary schools under the supervision of the State Ministry of Education, comprising approximately 202 public and 333 registered private secondary schools [12, 13].

Although the state comprises multiple LGAs, this study was conducted among selected secondary schools within Ekiti State due to logistical and feasibility considerations. The study was carried out over a period of four months from January to April 2026.

2.2. Study Population

The study population comprised secondary school teachers working in both public and private secondary schools within Ekiti State. Teachers across different subject areas were eligible, including those teaching Physical Education, sciences, arts, and commercial subjects.

2.3. Inclusion and Exclusion Criteria

Eligible participants were secondary school teachers currently employed in selected schools within Ekiti State who were present during the period of data collection and provided informed consent to participate in the study. Teachers from all subject areas, including physical education, sciences, arts, and commercial

subjects, were considered.

Administrative staffs who were not directly involved in teaching duties were excluded from the study. In addition, teachers who declined participation or returned incomplete questionnaires were not included in the final analysis.

2.4. Sample Size Determination

The sample size was calculated using the formula for single proportion in cross-sectional studies:

$$n = Z^2 \times p \times (1-p) / d^2$$

Where:

n = minimum sample size

Z = standard normal deviate at 95% confidence level (1.96)

p = estimated prevalence of good knowledge/practice (assumed to be 50% due to lack of prior local data)

d = margin of error (0.05)

This yielded a minimum sample size of 384.

Because the total population of eligible teachers in the selected schools was less than 10,000, finite population correction was applied using the formula:

$$nf = n /\{1+(n/N)\}$$

Where:
nf = adjusted sample size
n = initial sample size (384)
N = estimated population of eligible teachers in the selected schools

After adjustment for finite population and non-response, a total of 342 teachers were recruited and participated in the study.

2.5. Sampling Technique

A multistage sampling technique was employed to select participants for the study.

In the first stage, a comprehensive list of all registered secondary schools in Ekiti State was obtained from the State Ministry of Education. The schools were stratified into public and private categories to ensure appropriate representation. From this sampling frame, a total of 34 secondary schools (14 public and 20 private) were selected using simple random sampling, while ensuring feasibility and representation across the study area.

In the second stage, eligible teachers within the selected schools were recruited. Staff lists were obtained from each school, and systematic random sampling was used to select participants proportionately. The number of teachers recruited per school ranged from 8 to 15, depending on staff strength, ensuring adequate representation across schools.

Overall, a total of 342 teachers were recruited from the selected schools and included in the final analysis.

This approach ensured adequate representation of teachers across both public and private secondary schools while maintaining feasibility within the study period.

2.6. Study Instrument

Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument was designed to capture relevant information across key domains and consisted of six sections.

Section A obtained information on socio-demographic characteristics of respondents.

Section B assessed knowledge of sports-related head injuries and appropriate referral practices.

Section C evaluated attitudes toward hospital referral using a 5-point Likert scale.

Section D examined practices related to head injury management.

Section E explored barriers to hospital referral, while Section F assessed training needs and preferences.

The questionnaire comprised a combination of closed-ended, multiple-choice, and Likert-scale items to facilitate comprehensive data collection.

2.7. Validity and Reliability of the Instrument

The validity and reliability of the study instrument were carefully assessed prior to data collection. Content validity was established through expert review by specialists in public health, emergency medicine, and school health services to ensure that the questionnaire adequately covered all relevant domains.

Face validity was evaluated by pre-testing the instrument among a small group of teachers in a neighboring town outside Ekiti State to assess clarity, relevance, and comprehensibility of the items. Feedback obtained from the pre-test was used to refine and improve the questionnaire.

Reliability of the attitude scale was determined using Cronbach's alpha, with a value of 0.7 or higher considered indicative of

acceptable internal consistency.

2.8. Data Collection Procedure

Data collection was carried out by trained research assistants. Permission was obtained from school authorities before administration of the questionnaire.

Questionnaires were distributed to eligible teachers during school hours.

The purpose of the study was explained, and written informed consent was obtained.

Respondents completed the questionnaire anonymously and returned it immediately after completion.

The average time for completion was approximately 10–15 minutes.

2.9. Measurement of Variables

2.9.1. Knowledge Assessment

Knowledge was assessed using items in Section B. Each correct response was scored 1, and incorrect responses were scored 0. Total scores were converted to percentages and categorized as:

Good knowledge: ≥70%

Poor knowledge: <70%

2.9.2. Attitude Assessment

Attitude was measured using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Negatively worded items were reverse-coded. Mean scores were computed and categorized as:

Positive attitude: mean score ≥3.5

Negative attitude: mean score <3.5

2.9.3. Practice Assessment

Practice-related responses were scored as follows:

Always = 4

Often = 3

Sometimes = 2

Rarely = 1

Never = 0

Composite scores were calculated and converted to percentages:

Good practice: ≥70%

Poor practice: <70%

2.10. Outcome Variable

The primary outcome was hospital referral practice, categorized as good or poor based on composite practice scores.

2.11. Data Analysis

Data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM Corp., Armonk, NY, USA).

Descriptive statistics were used to summarize the data. Categorical variables were presented as frequencies and percentages, while continuous variables were summarized using means and standard deviations.

Bivariate analysis was performed using the chi-square test to assess associations between independent variables and hospital referral practice. Variables with a p-value less than 0.20 at the bivariate level were included in a multivariable logistic regression model to identify independent predictors of good referral practice.

Results were presented as adjusted odds ratios (AORs) with 95% confidence intervals (CIs). Statistical significance was set at $p < 0.05$.

2.12. Ethical Considerations

Ethical approval was obtained from the Ethics and Research Committee of Ekiti State University Teaching Hospital. Permission was also obtained from the school authorities. Participation was voluntary, and informed consent was obtained from all respondents. Confidentiality and anonymity were maintained by using unidentified questionnaires. Respondents were informed of their right to withdraw at any time without consequences.

3. Results

3.1. Socio-demographic Characteristics

The study included 342 teachers, with a slight female predominance (50.9%) as seen in Table 1. Most respondents were aged 30-39 years (38.6%), and over 43.9% had more than 10 years of teaching experience. The majority taught non-science subjects (60.2%), while only 18.7% were Physical Education teachers. Public school teachers constituted 41.2%, while 58.8% were from private schools. Notably, only 36.8% had received formal training in first aid or concussion management.

3.2. Knowledge of Head Injury and Referral

Overall knowledge was relatively high. Most teachers correctly identified red flag symptoms requiring referral (85.4%) and appropriate emergency responses (88.9%) as seen in Table 2. Recognition of concussion symptoms was also high (87.1%). However, misconceptions persisted, including the belief that CT scans always rule out concussion (42.7% incorrect) and that neck immobilization is unnecessary (38.6% incorrect).

3.3. Attitudes toward Referral

Approximately 69.6% of respondents demonstrated a positive attitude. Teachers largely supported cautious referral (mean 4.1 ± 0.9) and expressed strong need for further training (mean 4.5 ± 0.7) (Table 3). However, uncertainty remained regarding school referral policies (mean 2.8 ± 1.1), and some perceived referral as unnecessary (mean 2.4 ± 1.1).

3.4. Practices and Barriers

Although 59.6% had encountered head injury cases, consistent referral practices were limited: only 25.1% always referred, while 19.9% rarely or never did (Table 4). Removal from play was more commonly practiced (64.9% always/often). Major barriers included lack of training (66.7%), absence of school policy (62.0%), and inadequate facilities (59.6%).

3.5. Training Needs

A high proportion (88.9%) expressed willingness to receive training (Table 5). Preferred formats included on-site practical training (66.1%) and workshops. Key priority areas were recognition of red flags (76.6%) and first aid management (69.6%).

3.6. Predictors of Good Referral Practice

Good knowledge (AOR 2.34, p=0.001), positive attitude (AOR 1.96, p=0.005), and formal training (AOR 2.88, p<0.001) were significant predictors of appropriate referral (Table 6). Teaching experience and school type were not statistically significant.

Table 1: Socio-demographic Characteristics of Respondents (n = 342)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	<30	96	28.1
	30-39	132	38.6
	40-49	78	22.8
	≥50	36	10.5
Sex	Male	168	49.1
	Female	174	50.9
Highest qualification	NCE	88	25.7
	B.Ed / BSc / BA	176	51.5
	PGDE	32	9.4
	MSc/Med	38	11.1
	PhD	8	2.3
Teaching experience	<5	74	21.6
	5-10	118	34.5
	>10	150	43.9
Subject taught	Physical Education	64	18.7
	Biology	72	21.1
	Others	206	60.2
School type*	Public	141	41.2
	Private	201	58.8
Formal training (first aid/concussion)	Yes	126	36.8
	No	216	63.2

*School type refers to the type of school where respondents (teachers) were employed. Frequencies represent teachers, not the number of schools sampled.

Table 2: Knowledge of Sports-related Head Injury and Hospital Referral

Item	Correct n (%)	Incorrect n (%)

Concussion always involves loss of consciousness (false)	214 (62.6)	128 (37.4)
Red flag symptoms require urgent referral	292 (85.4)	50 (14.6)
Student feeling “ok” can return to play immediately (false)	268 (78.4)	74 (21.6)
Same-day return to vigorous sports is safe (false)	276 (80.7)	66 (19.3)
Recognition of concussion symptoms	298 (87.1)	44 (12.9)
Neck immobilization is necessary after head injury	210 (61.4)	132 (38.6)
Appropriate emergency response (call for help)	304 (88.9)	38 (11.1)
Repeated vomiting requires hospital referral	286 (83.6)	56 (16.4)
CT scan always rules out concussion (false)	196 (57.3)	146 (42.7)
Observation period should be at least 24 hours	232 (67.8)	110 (32.2)
Recommended actions after concussion	270 (78.9)	72 (21.1)
Appropriate decision-maker for referral	248 (72.5)	94 (27.5)
Repeated concussions have cumulative effects	284 (83.0)	58 (17.0)
Recognition of raised intracranial pressure signs	238 (69.6)	104 (30.4)
Repeated vomiting can be observed without referral (false)	260 (76.0)	82 (24.0)

Table 3: Attitudes toward Hospital Referral for Head Injury

Statement	Strongly	Disagree	Neutral	Agree	Strongly	Mean ± SD

	Disagree n (%)	**n (%)**	**n (%)**	**n (%)**	**Agree n (%)**	
Confidence in recognizing referral signs	24 (7.0)	48 (14.0)	62 (18.1)	112 (32.7)	96 (28.1)	3.6 ± 1.1
Referral is often unnecessary (R)	96 (28.1)	84 (24.6)	54 (15.8)	62 (18.1)	46 (13.5)	2.4 ± 1.1
Teachers should decide referral	38 (11.1)	72 (21.1)	78 (22.8)	86 (25.1)	68 (19.9)	3.2 ± 1.1
Fear of parents' reaction	30 (8.8)	62 (18.1)	68 (19.9)	104 (30.4)	78 (22.8)	3.5 ± 1.2
School has clear referral policy	58 (17.0)	96 (28.1)	74 (21.6)	72 (21.1)	42 (12.3)	2.8 ± 1.1
Prefer cautious referral	12 (3.5)	26 (7.6)	38 (11.1)	134 (39.2)	132 (38.6)	4.1 ± 0.9
First aid is sufficient (R)	84 (24.6)	102 (29.8)	68 (19.9)	54 (15.8)	34 (9.9)	2.6 ± 1.1
Need for more training	4 (1.2)	8 (2.3)	16 (4.7)	152 (44.4)	162 (47.4)	4.5 ± 0.7

R = Reverse-coded items. Mean scores were calculated after reverse coding negatively worded statements. Percentages may not sum to 100 due to rounding. Overall attitude classification was based on mean scores:

- Positive attitude (≥3.5) = 238 (69.6)
- Negative attitude (< 3.5) = 104 (30.4)

Table 4: Practices and Barriers Related to Hospital Referral

Variable	Category	Frequency (n)	Percentage (%)
Practice indicator	Had head injury cases (past 12 months)	204	59.6
Removal from play	Always	118	34.5
	Often	104	30.4
	Sometimes	72	21.1
	Rarely/Never	48	14.0
Inform parents/guardians	Always	142	41.5
	Often	98	28.7
	Sometimes	64	18.7
	Rarely/Never	38	11.1
Hospital referral practice	Always	86	25.1
	Often	92	26.9
	Sometimes	96	28.1
	Rarely/Never	68	19.9
	Used emergency services	148	43.3
	Provided written advice	122	35.7
Barriers to referral	Lack of school policy	212	62.0
	Lack of first aid training	228	66.7
	Difficulty contacting parents	174	50.9
	Transport challenges	196	57.3
	Fear of reprimand	158	46.2
	Inadequate facilities	204	59.6

Table 5: Training Needs and Preferred Formats

Variable	Category	Frequency (n)	Percentage (%)
Willing to receive training	Yes	304	88.9
	No	38	11.1
Preferred training format	Half-day workshop	198	57.9
	Full-day training	142	41.5
	On-site practical training	226	66.1
	Printed materials/manual	168	49.1
	Online course/webinar	154	45.0
Priority training topics	Recognizing red flags	262	76.6
	Immediate first aid procedures	238	69.6
	Communication with parents	184	53.8
	Referral pathways	206	60.2
	Return to play guidelines	198	57.9
	Neck/spine immobilization	176	51.5
Preferred training providers	Local clinicians/hospitals	208	60.8
	Ministry of Education	186	54.4
	NGOs	122	35.7
	School health personnel	168	49.1

Multiple responses were allowed for preferred training formats, priority training topics, and preferred training providers; therefore percentages may exceed 100%. NGO = Non-Governmental Organizations.

Table 6: Logistic Regression Analysis of Predictors of Good Referral Practice

Variable	AOR	95% CIs	p-value
Good knowledge	2.34	1.45-3.78	0.001
Positive attitude	1.96	1.22-3.15	0.005
Formal training	2.88	1.75-4.72	<0.001
>10 years teaching experience	1.42	0.88-2.28	0.142
Private school (vs public)	0.76	0.48-1.20	0.238

4. Discussion

4.1. Teachers' Knowledge of Sports-related Head Injury

The study demonstrated relatively good knowledge among teachers, particularly in recognizing red flag symptoms and emergency responses. This aligns with global trends showing improved awareness of concussion [1, 2]. However, persistent misconceptions, such as over-reliance on CT scans, highlight gaps in deeper clinical understanding, consistent with findings in Nigeria and other low-resource settings [10].

4.2. Attitudes toward Referral

A majority of teachers exhibited positive attitudes, especially toward cautious referral and the need for training. This is comparable to studies showing increased awareness but variable confidence in decision-making [8]. Nonetheless, uncertainty about school policies suggests systemic deficiencies in institutional support.

4.3. Referral Practices

Despite good knowledge and attitudes, referral practices were suboptimal. This knowledge–practice gap is widely reported in similar contexts [9, 10]. While many teachers removed students from play, fewer consistently initiated hospital referral, indicating hesitation or structural barriers.

4.4. Barriers to Referral

Key barriers identified-lack of training, unclear policies, and logistical constraints-mirror challenges reported in low- and middle-income countries [11]. Fear of reprimand and difficulty contacting parents further complicate timely decision-making.

4.5. Predictors of Practice

Formal training emerged as the strongest predictor of good referral practice, reinforcing evidence that targeted education improves clinical decision-making [8]. Knowledge and attitude also played significant roles, emphasizing the importance of comprehensive interventions.

4.6. Training Needs

The strong willingness to receive training highlights an opportunity for intervention. Preferences for practical, on-site training suggest that hands-on approaches may be more effective in improving competence and confidence.

4.7. Strengths and Limitations of the Study

This study has some limitations that should be considered when interpreting the findings. First, although the study was conducted in Ekiti State, the sampling was restricted to selected secondary schools due to logistical and feasibility constraints. As such, the findings may not fully represent all schools across the 16 Local Government Areas of the state, particularly those in more rural settings.

Second, the use of a cross-sectional study design limits the ability to establish causal relationships between variables. The associations observed should therefore be interpreted with caution.

Third, data were collected using self-administered questionnaires, which may be subject to recall bias and social desirability bias. Respondents may have overreported desirable practices or knowledge.

Despite these limitations, the study provides valuable insights into the knowledge, attitudes, and referral practices of teachers regarding sports-related head injuries in a typical school setting and highlights important areas for intervention.

4.8. Recommendations

To improve the management and referral of sports-related head injuries among students, there is a clear need for structured and sustained interventions within the school system. Regular and mandatory training programs should be organized for teachers, focusing on the recognition of concussion symptoms, identification of red flag signs, and appropriate referral procedures. Such training should emphasize practical, hands-on approaches to enhance both competence and confidence.

In addition, schools should develop and implement standardized policies that clearly outline procedures for managing head injuries and making timely hospital referrals. These policies will help reduce uncertainty and ensure consistency in decision-making across different school settings.

There is also a need to integrate basic first aid and concussion management into teacher education and professional development programs. This will ensure that teachers are better prepared from the outset of their careers.

Strengthening collaboration between schools and nearby healthcare facilities is equally important. Establishing clear referral pathways and communication channels will facilitate prompt access to medical care when needed.

Finally, improving logistical support within schools-such as access to emergency communication systems and transportation

options-will help address practical barriers that currently hinder timely referral of injured students.

5. Conclusion

This study highlights that while secondary school teachers in Ekiti State demonstrate relatively good knowledge and positive attitudes toward sports-related head injury management, referral practices remain inconsistent. The gap between knowledge and practice is largely driven by inadequate training and systemic barriers. Addressing these challenges through structured training, clear policies, and improved institutional support is crucial to ensuring timely and appropriate care for injured students.

Declarations

Author Contributions

The author solely conceived and designed the study, conducted data collection, performed data analysis, and drafted and revised the manuscript. The author also approved the final version of the manuscript for submission.

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Ethical Approval

Ethical approval for this study was obtained from the Ethics and Research Committee of Ekiti State University Teaching Hospital, Ado-Ekiti, Nigeria, prior to the commencement of the study. Permission was also obtained from the administrative authorities of the schools within the study areas.

Informed Consent

Informed consent was obtained from all participants before inclusion in the study. The purpose and procedures of the study were clearly explained to all respondents, and participation was entirely voluntary.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this study.

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Data Availability

The datasets generated and/or analyzed during the current study are available from the author on reasonable request.

Compliance with Ethical Standards and Human Rights

This study was conducted in accordance with internationally accepted ethical standards for research involving human participants, including the principles outlined in the Declaration of Helsinki and consistent with the principles of the United Nations Universal Declaration of Human Rights. The dignity, rights, safety, and well-being of all participants were respected throughout the study.

References

1. Bryan MA, Rowhani-Rahbar A, Comstock RD, Rivara F, Seattle Sports Concussion Research Collaborative. Sports-and Recreation-Related Concussions in US Youth. Pediatrics. 2016; 138(1): e20154635.
2. Centers for Disease Control and Prevention. Nonfatal traumatic brain injuries related to sports and recreation activities among persons aged ≤19 years-United States, 2001-2009. MMWR Morb Mortal Wkly Rep. 2011; 60(39): 1337-42.
3. McCrory P, Meeuwisse W, Dvořák J, et al. Consensus statement on concussion in sport-the 5th international conference on concussion in sport held in Berlin, October 2016. Br J Sports Med. 2017; 51(11): 838-847.
4. Giza CC, Kutcher JS, Ashwal S, et al. Summary of evidence-based guideline update: evaluation and management of concussion in sports. Report of the Guideline Development Subcommittee of the American Academy of Neurology. Neurology. 2013; 80(24): 2250-2257.
5. National Institute for Health and Care Excellence (NICE). Head injury: assessment and early management. London: National Institute for Health and Care Excellence (NICE); 2023 May 18. (NICE Guideline, No. 232.) Available from: https://www.ncbi.nlm.nih.gov/books/NBK592586/.
6. Cantu RC. Second-impact syndrome. Clin Sports Med. 1998; 17(1): 37–44.
7. Adeloye D, Thompson JY, Akanbi MA, et al. The burden of road traffic crashes, injuries and deaths in Africa: a

systematic review and meta-analysis. Bull World Health Organ. 2016; 94(7): 510-521A.

8. Rivara FP, Schiff MA, Chrisman SP, Chung SK, Ellenbogen RG, Herring SA. The effect of coach education on reporting of concussions among high school athletes after passage of a concussion law. Am J Sports Med. 2014; 42(5): 1197-203.
9. Al Gharsan M, Alarfaj I. Knowledge and practice of secondary school teachers about first aid. J Family Med Prim Care. 2019; 8(5): 1587-1593.
10. Nduka I. Perception and practice of first aid among school teachers in Aba, South-east, Nigeria. IOSR Journal of Dental and Medical Sciences. 2021; 20(6): 40–46.
11. Kobusingye OC, Hyder AA, Bishai D, et al. Emergency medical systems in low- and middle-income countries: recommendations for action. Bull World Health Organ. 2005; 83(8): 626-31.
12. Ekiti State Ministry of Education, Science and Technology. Summary of the list of public and registered private secondary schools in Ekiti State on LGA basis. Ado-Ekiti: Ekiti State Government; 2025. Available from: https://ekitistate.gov.ng/wp-content/uploads/2025/Edu/Summary_of_the_list_of_Public__and_Registered_Private_Secondary_Schools_in_Ekiti_State_on_LGA_basis%5b1%5d.pdf.
13. Ekiti State Ministry of Education, Science and Technology. Updated approved list of registered private secondary schools in Ekiti State. Ado-Ekiti: Ekiti State Government; 2025. Available from: https://ekitistate.gov.ng/wp-content/uploads/2025/Edu/updated%20approved%20list%20of%20private%20schools%20in%20ekiti-2.pdf.