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How much do school teachers know about childhood asthma in Ilesa, Nigeria?

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Abstract*: Background:* Childhood asthma is affected by events and conditions of the school environment. Teachers as de-facto caregivers of children with asthma have a major role to play in ensuring good asthma control in school. This study set out to determine the level of knowledge of school teacher about childhood asthma and factors influencing this knowledge.

Methods: Four secondary schools (two private and two public) in Ilesa, South West Nigeria were selected by multistage sampling method. All the teachers in these schools were required to fill a self -administered questionnaire incorporating a validated 40-item asthma knowledge questions. Factors associated with the level of knowledge were determined appropriately.

Results: A total of 132 teacher (M: F = 1:2) participated in the study with 85 (64.4%) from private school. The mean (SD) age of the teachers was 38.0 (9.1) years and median (IQR) years in teaching service was 7.0 (5.0 to 15.0) years. Majority (56.1%) of the teachers had university education while only 7 (5.3%) had a post graduate degree. The mean (SD) score of the 40 item questions was 21.5 (7.2) and majority (51.5%) had poor asthma knowledge (score < 22). Poorer knowledge was observed in questions related to the nature and management of childhood asthma than triggers and manifestations. No significant correlation was found between knowledge and age, teaching experience and qualifications ($p > 0.05$). However, teachers with previous training about childhood asthma had relatively good knowledge about the condition. ($p < 0.05$)

Conclusion: The level of knowledge about childhood asthma among school teachers in Ilesa is poor particularly as regards to nature and management of the disease. We advocate for training of school teachers about common childhood conditions including asthma to ensure optimal symptoms control in school.

Keywords: Childhood asthma, Knowledge, School teachers

Introduction

Asthma is a chronic inflammatory airway disorder characterised by recurrent episodic airway narrowing manifesting as intermittent or persistent wheeze, chest tightness, breathlessness and cough. These symptoms may resolve spontaneously or with medications.[1] Asthma affects all age groups including school aged children.[1] The prevalence of childhood asthma has been reported to be increasing worldwide.[2] Childhood asthma is believed to affect 5-10% of school aged children in Nigeria with another 3-5% probably unrecognized.[3] Falade *et al*[4] in 2004, using ISAAC questionnaire, reported a prevalence of 7.6% among school age children in Ibadan, Nigeria.

School children are required to take part in physical activities and exercise at school either formally as part of physical and health education or informally as leisure and peer activities.[5] These physical activities are often potent triggers of acute exacerbations of asthma in children.[6] Poorly controlled childhood asthma is a leading cause of school absenteeism which may lead to poor academic performance and ultimately to poor quality of life.[7]

The events and occurrences in schools as well as the school environment greatly affect the asthmatic child.[8] Excessive bully by peers and teachers can cause school phobia and emotional distress which can lead to acute asthmatic exacerbations and make symptoms control

very difficult.[8-9] Likewise the presence of triggering factors in the school environment such as dust, fumes, pollens, unfavourable weather conditions, certain food and dust mites which the child with asthma may be persistently exposed to may also make symptoms control equally difficult.[8-9] Conversely, excessive protection of children with asthma and exempting them from participating in school sports and recreational activities can make the child feel isolated and ostracized often leading to depression and low self-esteem.[10]
School teachers are the primary caregivers and custodians of the children under their care during the school hours and they are often called upon to help children with acute asthmatic exacerbations.[11] They are also required to assist children with the use of their medications and provide care and first aid treatment together with the school health workers for the children with asthma child before their parents and or health care professionals are contacted.[12] It is therefore very important for the school teachers to know about childhood asthma and indeed common childhood health conditions to be able to be of meaningful assistance to the children under their care.

Consequently lots of studies had been carried out to determine the level of knowledge of school teachers about childhood asthma[13-19] with reports of variable levels of knowledge and obvious gaps in knowledge about different aspects of the disease.[13-19] The majority of these studies were from developed countries of Europe[15] and North America[12, 17, 19] and Asia[14, 18] with paucity of data from sub-Saharan Africa including Nigeria.
As levels of knowledge about childhood diseases including asthma may be affected by localperceptions and experiences, myths and beliefs which may differ from one place to another. It is important to assess the levels of awareness and knowledge about childhood asthma among school teachers in this locality. This study therefore sets out to determine the level of knowledge of school teacher about different aspects of childhood asthma and factors influencing these levels of knowledge among school teachers in Ilesa, Nigeria.

Methods

Study design

This was a cross sectional study
Study location: The study was carried in four secondary schools in Ilesa East Local Government Area, State of Osun, Nigeria. Ilesais the largest town in Ijesaland, located about 200 kilometres north-east of Lagos.[20]

Sample selection

The local government has 24 secondary schools, 11 public (middle school) and 13 Private.[21] The participating schools were selected by multistage sampling – all the schools in Ilesa East LGA were divided into two i.e. public and private, (the sampling frame) the two schools were then selected each from the pools of public and private schools by simple randomization method.

Sample size estimation

The minimum sample size for this study was estimated using open Epi sample size software.[(R) 22] Based on the assumption that 38% of teachers would have limited knowledge of childhood asthma (from the study of Govender and Gray) [13] and a 10% level of precision in a cluster of 24 schools in the local government and an estimated 95% respondent rate, a minimum sample size of 130 was obtained.

Study procedure

The permission of the local educational authority and institutional ethical approval from the Institute of Public Health, Obafemi Awolowo University, Ile-Ife, Nigeria was obtained to carry out this study. The permission and approval of the principals and head teachers of the participating schools were also obtained. Consent from all the teachers in the selected schools was obtained and they were sensitized about the nature and reasons for the study.

The study participants were then required to fill a self-administered questionnaire to capture their age, sex, highest educational qualifications and number of years in teaching service. Also of interest was whether the study participants had previous information about childhood asthma and the sources of the information. Personal and/or family history of asthma was obtained as well as history of previous experience with students with asthma. Also the teachers were asked if they had witnessed or assisted any child with acute asthmatic exacerbations in the past. The disposition of the teachers as regards having a child with asthma in their classroom was also ascertained.

School teachers' Asthma knowledge assessment

The level of knowledge of the school teachers about childhood asthma was assessed using the Asthma Knowledge Questionnaire (AKQ). This was a 40-item questions derived from previous validated questionnaire (Govender and Gray)[13] The questionnaire was pre-tested in a pilot study among teachers in a school different from those selected for the study for content and face validity of the questions.

The AKQ has four parts thus: Part one with 11 questions assess general knowledge about childhood asthma; part two with eight questions assess knowledge about signs and symptoms of childhood asthma; part three with 11 questions assess knowledge about common triggers of childhood asthma, while part four with 10 questions assessed knowledge about asthma medications and management. The study participants were required to pick one of three options for each question - a "true", "false" or "don't know". The "don't know" option was included to discourage the study participants from guessing and only pick the options they are sure of. A score of one was allocated for every correct answer and '0" for a wrong and "don't know" response. For the purpose of

this study, score less than 22 was considered poor or suboptimal knowledge of childhood asthma.

Data analysis

This was done using the Statistical Programme for Social Sciences (SPSS) software version 17.0 (SPSS Inc., Chicago 2008, IL, USA) and WinPEPI®.[23] Categorical variables such as sex, age categories and highest educational qualifications of the teachers were summarized using proportions and percentages, while continuous variables such as scores of study participants from the AKQ and length of time in teaching service were summarized using mean and standard deviations (SDs) for normally distributed variables and median and interquartile ranges (IQR) for non-normally distributed ones. Differences between continuous variables were analyzed using Student's t-test, while categorical variables were analyzed using Pearson's Chi-square test and Fisher's exact test as appropriate. Pearson or Spearman rho was used to assess the correlations between school teachers' scores in the AKQ and their ages, length of service in the teaching profession. The level of significance at 95% confidence interval was taken at $P < 0.05$.

Results

Of the 150 questionnaire distributed to the schools, 132 (88.0%) were adequately filled and form the basis of further analysis. One hundred and thirty-two teachers participated in the study, 85 (64.4%) teach in private schools and there was female preponderance with a male to female ratio of 1: 2.

Socio-demographic characteristics of the study participants:

These are highlighted in Table 1.

Age of the study participants: The ages of the school teachers ranged from 20 to 60 years with a mean (SD) of 38 (9.2) years. About one-half of the teachers were in the age range of 30 to 39 years.

Ethnicity: The majority (89.3%) of the teachers belongs to Yoruba ethnicity which was the predominant ethnic group in the study location; the other tribes represented were Igbos (9.1%); Ebiras and Edos. (Table 1)

Level of education: Seventy four (56.1%) of the teachers had university or Polytechnics education up to BSC/ BA or Higher National Diploma (HND). The distribution of the highest level of educational qualifications of the teachers is presented in table 1.

Teaching experience: The length of years in the teaching profession of the teachers ranged from one to 35 years with median (IQR) of 7.0 (5.0 – 15.0) years. The majority (56.1%) had less than 10-year teaching experience, only three (2.3%) of the teachers had spent 30 years or more in the teaching profession.

Personal or family history of asthma in the teachers: Nine (6.8%) of the teachers gave history of being asthmatic and 25 (18.9%) had a child or close relative with asthma.

Table 1: Socio-demographic characteristics and general information of the school teachers

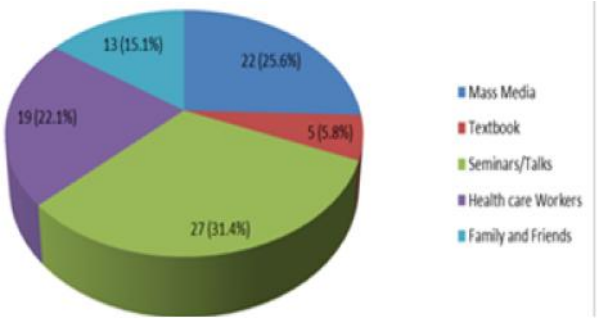
Socio-demographic characteristics	Frequency (n = 132)	Percentage (%)
Sex		
Male	43	32.6
Female	89	67.4
Age		
20-29	21	15.9
30-39	65	49.2
40-50	26	19.7
50-60	20	15.2
Type of school		
Public	47	35.6
Private	85	64.4
Ethnicity		
Yoruba	118	89.4
Igbo	12	9.1
Others	2	1.5
Level of education of the teachers		
National Certificate of Education	44	33.3
Ordinary National Diploma	7	5.3
Degree/Higher National Diploma	74	56.1
Post graduate	7	5.3
Years in teaching service		
< 10	74	56.1
10 -19	32	24.2
20 -29	23	17.4
≥30	3	2.3
Experience with asthma		
Personal history	9	6.8
Close relative	25	18.9
Previous information about asthma	86	65.2
Had a student with asthma in class	38	28.8
Comfortable having an asthmatic child in class	17	12.9
Seen/assisted a child with acute asthmatic exacerbation	50	37.8
Had formal lecture/training about asthma	43	32.6

Experience with childhood asthma

Eighty-six (65.2%) of the teachers were aware or had previous knowledge about childhood asthma and the sources of their information are highlighted in figure 1. About one-third (46) of the teachers however had no previous knowledge about childhood asthma.

Thirty-eight (28.8%) of the teachers gave a history of having had a student with asthma in their class either presently or in the past, 50 (37.9%) had seen or assisted a child with acute asthmatic exacerbation, 43 (32.6%) had received a talk, lecture or training about childhood asthma, but only 17 (12.9%) of the teachers are comfortable having an asthmatic child in their classroom.

Fig 1: source of information about childhood asthma



Level of knowledge of the teachers about childhood asthma using the 40-item AKQ: The AKQ scores of the teachers ranged from 3 (7.5% of the obtainable score) to 34 (85.0% of the obtainable score). The mean (SD) score was 21.5 (7.2) and 68 (51.5%) of the teachers were considered to have poor knowledge about childhood asthma (AKQ score < 22 of the 40 item questions).

Domains of knowledge: The Mean (SD) scores in the four domains of knowledge tested by the AKQ are highlighted in tables 2 to 5. The teachers demonstrated relatively higher level of knowledge about triggers of childhood acute exacerbation and clinical manifestations of childhood asthma than general knowledge about the disease. The poorest level of knowledge was demonstrated in question regarding management of the disease. Only 6.8% of the study participants knew that asthma is not due to dilatation of the bronchi, while majority (>80.0%) knew that breathlessness, cough and wheeze are features of childhood asthma and that house dust mites can trigger acute asthmatic exacerbations. (Tables 2- 4)

Significantly there were higher scores in question related to clinical features of childhood asthma compared to general knowledge about the disease [81.8 (37.1) vs. 64.7 (3.3); t =5.27; p <0.001]. Likewise the teachers demonstrated significantly more knowledge about the triggers of childhood asthma exacerbation than the management of the condition [84.4 (21.3 vs. 47.2 (31.4); t = 11.3; p <0.001].

Table 2: The rate of correct responses of school teachers to general questions about childhood asthma

Questions	Answers	Correct answers n = 132	Percentage (%)
General knowledge about asthma:			
1. Asthma is a lung disease?	True	102	77.3
2. Asthma is a communicable disease;it spread from one person to another?	False	95	72.0
3. Asthma is a hereditary disease?	True	96	72.7
4. Asthma is a primary emotional disorder that needs psychological counseling?	False	29	22.0
5. Sometimes asthma can be caused by an infection due to microorganism?	False	31	23.5
6. Asthma is a chronic disease which needs treatment for long time?	True	109	82.6
7. Asthma predominantly effect female children	False	56	42.4
8. Asthma occurs in specific age among children?	False	50	37.9
9. Asthma attack occurs due to dilatation of the bronchi?	False	9	6.8
10. Asthma attack occurs due to inflammation of the bronchiduring asthma attack?	True	62	47.0
11. The bronchi are blocked with phlegm during attack	True	73	55.3
Mean (SD) score 64.7 (3.3)			

Table 3: The rate of correct responses of school teachers to questions relating to signs/symptoms and triggers of exacerbation of childhood asthma

Questions related to signs and symptoms	Answers	Correct answers n = 132	Percentage (%)
1. Symptoms of asthma are difficulty in breathing, cough and wheezing?	True	113	85.6
2. Asthmatic attacks are more usually occur in day time as compare to night?	False	32	24.2
3.Asthma attack can cause death?	True	117	85.6
4.Asthma can be completely cured?	False	30	22.7
5. Inhalers are used to treat asthmatic attack?	True	119	90.2
6. Asthma can affect student's studies?	True	105	79.5
7. Asthmatic children have low IQs?	False	65	49.2
8. Peak flow meters are used to determine the severity of asthma?	True	73	55.3
Mean (SD) score 81.8 (37.1)			
Questions related to triggers of acute exacerbation	Answers	Correct answers n =132	Percentage (%)
1. Every patient has his own asthma triggers?	True	73	55.3
2. Viral infection	True	38	28.8
3. Smoking	True	105	79.5
4. Pollen grains	True	58	43.9
5. Perfumes	True	95	72.0
6. House dust mites	True	107	81.1
7. Emotional stress	True	88	66.7
8. Strenuous exercise	True	100	75.8
9. Certain food and drugs	True	80	60.6
10. Fur of animals	True	84	63.6
11. Chalk dust	True	100	75.8
Mean (SD) 84.4 (21.3)			

Table 4: The rate of correct responses of school teachers to questions about childhood asthma medications and management

Questions	Answers	Correct answers n = 132	Percentage (%)
1. Antibiotics are used to relieve an asthma attack?	False	24	18.2
2. Aspirin is used to relieve an asthma attack?	False	32	26.5
3. Ventolin(R) are used to relieve an asthma attack?	True	34	25.8
4. Oxygen therapy is required in very severe asthma attacks?	True	100	75.8
5.Ventolin(R) can cause a rapid pulse rate, palpitations and tremors?	True	34	25.8
6. Asthmatic children should avoid exercise and sports?	False	33	25.0
7. Preventative medication can be taken by the asthmatic childbefore exercise and sports?	True	84	63.6
8. Swimming is a good sport for asthmatics?	True	22	16.7
9. With appropriate treatment most children should lead a normal life with no restrictions on activity?	True	91	68.9
10. Self-medication should be discouraged in the management of asthma in children?	False	18	13.6

Mean (SD) score 47.2 (31.4)

Level of knowledge as related to socio-demographic characteristics of the teachers:
Table 5 highlights the association between socio-demographic characteristics of the school teachers as related to their having good or poor knowledge about childhood asthma.
No significant association between the level of knowledge (poor or good knowledge) of the teachers and the age, sex, type of school, and ethnicity of the teachers. (Table 5)
Correlation between knowledge level and age, teaching experience and qualifications of the teachers: There was a weakly negative correlation between the level of knowledge of the teachers about childhood and their age (Pearson Correlation -0.102; p = 0.242) as well as the length of service in the teaching profession (Pearson Correlation -0.127; p = 0.145) though not statistically significant. However teachers with NCE have significantly poor knowledge about childhood asthma than those with higher qualifications. (Table 5) The level of childhood asthma knowledge correlated positively with the level of education of the teachers, though not statistically significant (Pearson Correlation 0.126; p =0.151).

Table 5: Socio-demographic characteristics and general information of the school teachers and as related to their knowledge about childhood asthma

Socio-demographic characteristics	Poor childhood asthma knowledge n = 68 (%)	Good childhood asthma knowledge n = 64 (%)	p -value
Sex			
Male	21 (30.9)	22 (34.4)	0.669
Female	47 (69.1)	42 (65.6)	
Age			
20-29	12 (17.6)	9 (14.1)	0.574
30-39	29 (42.6)	36 (56.3)	0.118
40-50	15 (22.1)	11 (17.2)	0.482
50-60	12 (17.6)	8 (12.7)	0.410
Type of school			
Public	20 (29.4)	27 (42.2)	0.126
Private	48 (70.6)	37 (57.8)	
Ethnicity			
Yoruba	63 (92.6)	55 (85.9)	0.211
Igbo	3 (4.4)	9 (14.1)	0.104#
Others	2 (2.9)	0 (0.0)	0.503^
Level of education of the teachers			
NCE	30 (44.1)	14 (21.9)	0.007
Diploma	1 (1.4)	6 (9.4)	0.102
Degree	34 (50.0)	40 (62.5)	0.206
Post graduate	3(4.4)	4 (6.3)	0.698
Years in teaching service			
< 10	34 (50.0)	40 (62.5)	0.148
10 -19	18 (26.5)	14 (21.9)	0.538
20 -29	13 (19.1)	10 (15.6)	0.062
≥30	3 (4.4)	0 (0.0)	0.243^

*National certificate of Education; # Fischer's Exact applied; ^Yate's Correction applied

Level of knowledge as related to experience with childhood asthma among the teachers: Table VI highlights the association between experience of the teachers about asthma as related to good and poor knowledge of the condition.
Teachers who have had previous lectures/training about childhood asthma had significantly better knowledge about the disease compared to those without previous lecturers/training. (x^2= 9.210; p = 0.02). Likewise teachers whose source of information about childhood asthma is formal seminar/talks had better knowledge about the disease compared to those who acquired their information from other sources including from health care workers. (Table 6). Also significantly related to having good knowledge about childhood asthma among the teachers was having had an encounter with student with asthma either having had an asthmatic child in class or assisted a child with acute asthmatic exacerbation. However personal history of asthma or history of asthma in a close relative of the teachers was not significantly associated with higher level of knowledge among the teachers. (table 6)

Table 6: Awareness and previous experience of the school teachers and as related to their knowledge about childhood asthma

Variables	Poor childhood asthma knowledge n = 68 (%)	Good childhood asthma knowledge n = 64 (%)	p -value
Experience with asthma			
Personal history	3 (4.4)	6 (9.4)	0.432
Close relative	10 (14.7)	15 (23.4)	0.201
Previous information about asthma	36 (52.9)	50 (78.1)	0.002
Sources of information			
Mass media	14 (20.6)	8 (12.5)	0.213
Textbooks	3 (4.4)	2 (3.1)	0.698
Seminars and talks	8 (11.8)	19 (29.7)	0.011
Health care workers	6 (8.8)	13 (20.3)	0.060
Family and friends	6 (8.8)	10 (15.6)	0.231
Had a student with asthma in class	12 (17.6)	26 (40.6)	0.004
Comfortable having an asthmatic child in class	8 (11.8)	9 (14.1)	0.694
Seen/assisted a child with acute asthmatic exacerbation	16 (23.5)	34 (53.1)	0.001
Had formal lecture/ training about asthma	11 (16.2)	32 (50.0)	0.001

Discussion

The present study reveals limited knowledge about childhood asthma among school teachers in Ilesa, Nigeria as only about one-half of the teachers scored 50 percent or more of the total (AKQ) questions. This is in keeping with report by Govender and Gray from South Africa[13]and Talieha *et al*[14] from Pakistan. Other workers in developed and developing countries also reported limited or suboptimal knowledge about childhood

asthma among school teachers.[17-19]
About one-third of the teachers had no previous experience or awareness of childhood asthma. This was also reported by other workers from developing countries.[13-14] However high awareness or experience about childhood asthma among school teachers in the United Kingdom was reported by Bevis and Taylor.[15] This relatively poor awareness about childhood asthma in developing countries may be related to the fact that childhood health issues including asthma are often missing in the curriculum of teachers[11] coupled with the non-existence of basic school health education and health services in most schools in developing countries compare to what is obtainable in developed countries.[24]

Worthy of note from the present study is that more proportion of the teachers got information about childhood asthma from mass media than from health care workers. This finding was similarly reported by Talieha *et al*[14] from Pakistan and Jiwane and Wadhva from India.[18] This may be related to poor school health programmes in majority of schools in developing countries[24] and the fact that health care providers may not have enough time and patience to give comprehensive health education including asthma education to their clients both in the busy specialist clinics and in the school environment.[25] These corroborate the findings in this study that even the teachers with personal history of asthma or those who had a child or close relative with asthma did not significantly have better knowledge about asthma than others. This underscores the need for health care providers and health educators to provide more comprehensive information about childhood health issues including asthma to their clients and caregivers.

In the present study, the school teachers had better knowledge of triggers and clinical manifestations of childhood asthma than knowledge about management of the disease. This finding has been reported by other workers assessing asthma knowledge among school teachers[13-15] and among parents/caregivers.[26] This may be related to the domain health workers or health educators lay more emphasis on during counseling sessions on childhood asthma. Also triggers and clinical signs/ symptoms are easier to conceptualise and understand by teachers and parents/caregivers alike than more confusing explanations of the pathogenesis and management of childhood asthma.

Worthy of note from this study is that the level of knowledge of the teachers is not related to age, length of years in teaching services and level of education of the teachers. These findings were also noted by Govender and Gray in South Africa[13] and by Jiwane *et al* in India.[18] This may be because specific asthma education has been reported to be grossly inadequate and/or absent in most teachers' training curricula.[11] Furthermore, educational or academic qualifications do not always translate to health literacy.
Teachers with previous training about childhood asthma in the present study had better knowledge about the condition. This was corroborated by Abdel Gawwad and El-Herishi[16] in Riyadh Saudi Arabia where the provision of Information, Education and Communication (IEC) materials to school teachers significantly improved their level of knowledge about asthma.[16] The need for specific training and provisions of information about childhood health issues to teachers and caregivers of children cannot be overemphasized.

Lots of misconceptions about childhood asthma were observed among the study participants. For instance, over 75.0 percent of the teachers believed childhood asthma can be completely cured. This misconception was also reported by workers from other countries.[15-19] Teachers and caregivers often misconstrue well controlled asthmatic symptoms as "complete cure".[28] This may be a dangerous notion as it may lead to relaxation about management, adherence to medications, avoidance of triggers and possible unexpected fatal consequences.[28-29] The implies that children and their parents/ caregivers should be repeatedly educated on the need to continue to adhere strictly to asthma treatment plans even when asthma symptoms are well controlled.
Also of note is the poor knowledge and misconceptions of the school teachers about the management of asthma in children. More than 70 percent of the study participants did not know that aspirin is not used to relieve an asthmatic attack. This is similarly reported by Govender and Gray in South Africa.[13] Aspirin may in fact precipitate or worsen asthma exacerbation and is best avoided even in the treatment of fever in children with asthma and those with viral illness.[30-31] Also most of the teachers did not know that antibiotics may not be useful to relieve asthma attack and appropriately used bronchodilators are needed. This misconception about use of antibiotics in relieving asthma symptoms was observed among teachers in South Africa,[13] Asian Countries[14,16,18] and even in developed countries.[12,15,19] This may not only lead to poorly treated symptoms of asthma but also may contribute to antibiotic misuse with consequent development of antibiotic resistance.[32] The need for enlightenment, awareness creation and strengthening of the school health instruction services to educate the entire school personnel is of paramount importance.

Concerning childhood asthma and physical activities, two-third of the respondents in this study believed that asthmatic children should avoid exercise and sports altogether. This was similarly reported by workers from Pakistan,[14] India[18] and South Africa[13]. This misconception often arises because sizeable proportion of children with asthma may have exercise-induced bronchospasm during, and often shortly after engaging in physical activities.[33-34] This fact however should not prevent children with asthma from engaging in guided exercises, physical activities and school sports necessary for their optimal growth and development.[34] Use of short-acting bronchodilator, before and after engaging in these activities and pre-exercise warm-up activities among others have been recommended as being effective to eliminate, reduce and/or treat exercise-induced bronchospasms.[34]
We appreciate the fact that the present study assessed only the knowledge of the teachers about childhood

asthma and practice of these teachers which may be different from knowledge was not assessed. Nonetheless, the use of self-administered validated tool to assess the level of knowledge which also indirectly assessed their practice constitutes great strength of the study.

In conclusion, this study has highlighted suboptimal knowledge and lots of misconceptions about childhood asthma among schoolteachers in Ilesa, Nigeria. These gaps in knowledge are not related to the teachers' age, length in teaching service and level of education. However, teachers who have had formal training about asthma or had previous contact or experience about childhood asthma exacerbations had better knowledge about the condition.

We hereby recommend routine training and provision of comprehensive information about childhood health issues including asthma to school teachers and other school personnel to ensure more school-friendly asthma environment.[35] This will make the school environment a safer place for children with asthma. Inclusion of comprehensive training about childhood asthma and other health related issues in the curriculum of teachers will also be worthwhile.

Author's contributions

Kuti BP: Conceptualised the study, collected and analysed the data and wrote the manuscript

Kuti DK: Participated in data collection and analysis. Also revised the manuscript

Omole KO, OSO BO, Mohammed LO, Minna YA participated in data collection and critical review of the manuscript.

All the authors approved the final version of the manuscript.

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