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Original Article

Knowledge of Acute Rheumatic Fever (ARF) Among Adolescents in Enugu Metropolis.

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Abstract

Background: ARF is a major public health issue among children with increased morbidity and mortality. This study aims to ascertain the level of awareness and knowledge of the college adolescent children on acute ARF.

Methodology: This was a cross-sectional study carried out among 553 adolescents from ten secondary schools in Enugu metropolis over a 4-month period.

Results: A total of 553 adolescents were studied, with a mean age of 14.4 ± 2.7 years and a female predominance (64.9%). Overall, awareness of rheumatic fever was good (63.3%), with health workers, peers, and social media as the major information sources. Knowledge of key symptoms such as joint pain (95.3%), sore throat (94.2%), and shortness of breath (81.7%) was high, and most respondents correctly identified preventive measures (87.5%) and treatment options (89.3%). The mean knowledge score was 23.1 ± 5.8. Significantly higher knowledge was observed among respondents aged <15 years, those in junior secondary school, those with parents having tertiary education, and those from a higher socio-economic class. Junior secondary school status remained an independent predictor of good knowledge.

Conclusion: This study demonstrates that although awareness of rheumatic fever among adolescents is relatively high, comprehensive knowledge, particularly regarding disease burden, is inadequate. Significant socio-demographic disparities in knowledge exist, influenced by age, educational level, parental education, and socio-economic status. Bridging the gap between awareness and accurate knowledge is essential to improving early recognition, prevention, and control of rheumatic fever and its long-term complications.

Keywords: ARF; secondary school; adolescents; knowledge; awareness

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Introduction

Cardiac disease is grouped into acquired and congenital heart disease. [1-6] Acute ARF (ARF), an example of acquired heart disease, is a delayed autoimmune reaction in genetically predisposed individuals to Group A β- haemolytic Streptococcal (GAS) pharyngitis. [1-4] It is a self-limited disease of variable manifestations that typically involves the joints, skin, brain, serous surfaces and the heart. [1] Acute Rheumatic Fever is a major public health concern in developing countries; the incidence is estimated to be 282,000 to 471,000 new cases per year, and between 233,000 and 500,000 ARF-related deaths per year globally. [2] It is estimated that there are about 470,000 new cases of ARF annually, with approximately 340,000 between the ages of 5 and 15 years, 60% of those with ARF develop Rheumatic heart disease (RHD), which accounts for about 230,000 deaths annually. [2,3] Socioeconomic and environmental factors, poverty, undernutrition, overcrowding, poor housing, health system-related factors, shortage of resources for health care, inadequate expertise of health care providers, low level of knowledge of the disease in the community, and inadequate treatment of streptococcal throat infection are all predisposing factors. [3] Limited enforcement of secondary prevention of ARF commonly affects children between the ages of 5 and 14 years, with a peak incidence of 8 years. [4,5] Apart from chorea, no race, ethnic group or sex predilection had been implicated as predictors of ARF. [4] It occurs about a week to 1 month after Group A β-Haemolytic Streptococcal pharyngitis with M-Serotypes- 1,3,5,6,14,18,19,24 being the etiological factors. [4]

Damage to the heart valves and rhythm disturbances, which could lead to premature death and morbidity among adolescents, are possible sequel of Rheumatic Heart Disease. [6-10] There is an increased number of deaths from RHD by an average of 16.94 units, with an increased mortality rate by 215%. The rate of hospitalization also increases by 264% and mortality by 42.5%. [10]

The management of RHD over half a decade cost about US$ 26.715.897,70, with mortality rates of 2.68 and 8.53 for 2019, respectively, for ARF and RHD. [10] Besides, about 33.4 million cases of RHD had been reported globally. [10] In a developing country like Nigeria, there is no national registry of RHD, and it is difficult to determine the trends in the prevalence rates of this condition over time. [10] Most of the studies about ARF are procured from hospital-based studies.

Acute Rheumatic fever is prevalent among adolescents. Poor awareness and lack of knowledge of the existence, impact, morbidity and mortality among adolescents are serious factors militating against the reduction of the burden of ARF. [10] This study aims to ascertain the level of awareness and knowledge of the college adolescent children on acute ARF in Enugu metropolis.

What previous studies on this topic have shown?

Previous studies have only focused on the prevalence of ARF with documented burden and impact of the disease.

Why is this study still needed?

Poor awareness and lack of knowledge of ARF among adolescents may impact morbidity and mortality among adolescents. An in-depth view into the knowledge of ARF will help in the reduction of the burden of this disease among this population.

Methods

Study Area

This research was executed in day secondary schools in Enugu city.

Study Design

This is a cross-sectional study involving 553 adolescents recruited from urban and rural schools in Enugu city.

Study population
The study involved 553 adolescents aged 10-19 years recruited from urban and semi-urban schools in Enugu city.

Inclusion Criteria
Adolescents who attended the rural or urban secondary schools and who gave oral consent were enrolled in the study.

Exclusion Criteria
Adolescents with no granted consent were excluded from the study

Sample Size Determination
For a 95% confidence level and 5% precision for a population >100,000, sample size of 553 was estimated from the tables of sample sizes as documented by Israel et al. [11] This gives precision, confidence level, and variability for different population size.

Sampling technique
The secondary school adolescents included in this study were selected by means of a two-stage sampling technique. There are four hundred and sixty-eight (468) secondary schools in Enugu metropolis, with three municipal zones in the town. This included Enugu East, Enugu South, and Enugu North municipal zones. The number of secondary schools in the municipal zones was documented and scored based on the number of students in the secondary schools. Based on the scores and ranking of the three areas, the first ten schools were selected. The first stage of selection comprises the selection of one urban and one rural secondary school in each of the three municipal zones with the aid of a simple random sampling technique. Thereafter, a list of secondary schools was made; this is the second stage. The number of adolescents in the four classes from the selected ten schools served as the sampling frame. When we divide this number by the sample size of 553, a sampling interval is obtained.

Tools/Instruments
Data for this study were collected using a structured, validated questionnaire administered through face-to-face interviews. The instrument was originally adapted by Ray et al. [7] and was previously administered among schoolchildren aged 10–16 years who were randomly selected from various schools to ensure representativeness.

The questionnaire assessed two major domains: **knowledge** and awareness **of acute rheumatic fever (ARF).** [7] Knowledge of ARF was evaluated using a total of 11 items. Five of these items assessed recognition of clinical symptoms, where each correct response was awarded one mark, while incorrect responses received zero. The remaining six items assessed broader aspects of the disease, including its prevalence, the commonly affected age group, clinical impact, methods of diagnosis, available treatment options, and preventive strategies. For these six questions, each correct response was allocated four marks, while incorrect responses were scored zero. Based on this scoring system, the highest possible score for ARF knowledge was 29 for each participant.

To determine the socioeconomic status of participants, variables included in the questionnaire were analysed using Principal Component Analysis (PCA) in STATA statistical software (version 12). The 11 socioeconomic variables were entered into the PCA model to generate a composite wealth index. Participants were then classified into socioeconomic quartiles based on their computed scores: Q1 (poorest), Q2 (very poor), Q3 (poor), and Q4 (least poor). For further analysis, these categories were collapsed into two groups: lower socioeconomic class (comprising the poorest and very poor quartiles) and higher socioeconomic class (comprising the poor and least poor quartiles). The reliability of the questionnaire was evaluated using

Cronbach's alpha coefficient to assess internal consistency, which yielded a value of 0.80, indicating good reliability. In addition, test–retest reliability was assessed using Pearson's correlation coefficient, which produced a value of 0.50, demonstrating acceptable stability of the instrument over time. [5]

Data Management

Data were entered and analyzed using the Statistical Package for the Social Sciences (IBM SPSS) version 25. Continuous variables were summarized using means and standard deviations, whereas categorical variables were expressed as frequencies and percentages. Comparisons between two groups were performed using the Student's *t*-test, while analysis of variance (ANOVA) was applied for comparisons involving more than two groups. Pearson's correlation analysis was used to assess the strength and direction of relationships between continuous variables. Statistical significance was set at a *p*-value of less than 0.05.

The primary outcome variables included knowledge of rheumatic fever. Responses were subsequently dichotomized, with "agree" and "strongly agree" categorized as 'Yes', while all other responses were grouped as 'No'.

Socio-economic status of participants' families was determined using an asset-based approach involving ownership of eleven household items: television, refrigerator, cable television, electric fan, air conditioner, washing machine, motor vehicle, cooking gas, microwave oven, generator, and electric fan. Principal Component Analysis (PCA) was conducted using STATA version 12 to derive a composite wealth index. The resulting scores were categorized into quartiles: Q1 (poorest), Q2 (very poor), Q3 (poor), and Q4 (least poor). These were further dichotomized into low socio-economic status (Q1 and Q2) and high socio-economic status (Q3 and Q4).

Knowledge of rheumatic fever was evaluated using 11 items. Five items assessed knowledge of clinical symptoms, with each correct response awarded one point and incorrect responses scored zero. The remaining six items assessed broader aspects, including disease prevalence, at-risk age group, impact, diagnosis, treatment, and prevention; each correct response was assigned four points. The maximum achievable score was 29. Mean knowledge scores were compared across independent variables using the Student's *t*-test for two groups and ANOVA for more than two groups.

Results

Table 1: Socio-demographic characteristics of respondents

Variable	**Frequency (n=553)**	**Percent (%)**
Age of respondents in years		
Mean±SD	14.4±2.7	
Age of respondents in groups		
<15 years	288	52.1
15-19 years	253	45.8
≥20 years	12	2.2

Gender		
Male	194	35.1
Female	359	64.9
Marital status		
Single	525	94.9
Married	28	5.1
Class of study		
Junior Secondary School	282	51.0
Senior Secondary School	271	49.0
Educational Attainment of Father		
No formal education	62	11.2
Primary education	58	10.5
Secondary education	158	28.6
Tertiary education	275	49.7
Educational Attainment of Mother		
No formal education	18	3.3
Primary education	49	8.9
Secondary education	166	30.0
Tertiary education	320	57.9
Employment status of Father		
Unemployed	23	4.2
Self-employed	285	51.5
Paid employment	245	44.3
Employment status of Mother		
Unemployed	21	3.8

Self-employed	258	46.7
Paid employment	274	49.5
Location		
Urban	300	54.2
Rural	253	45.8
Family socio-economic status		
Low socio-economic class	277	50.1
High socio-economic class	276	49.9

Socio-demographic characteristics of respondents

A total of 553 adolescents were included in the analysis. The mean age of the respondents was 14.4 ± 2.7 years. More than half of the participants (52.1%) were aged less than 15 years, while 45.8% were aged 15–19 years and 2.2% were aged 20 years or older. Females constituted the majority of respondents (64.9%), while males accounted for 35.1%. Most participants were single (94.9%), with only 5.1% married. Slightly more than half of the respondents (51.0%) were in junior secondary school, while 49.0% were in senior secondary school. Regarding parental characteristics, 49.7% of fathers and 57.9% of mothers had attained tertiary education. A majority of fathers were self-employed (51.5%) or in paid employment (44.3%), while only 4.2% were unemployed. Similarly, 49.5% of mothers were in paid employment, 46.7% were self-employed, and 3.8% were unemployed. More than half of the respondents resided in urban areas (54.2%), while 45.8% were from rural areas. The distribution of respondents by socio-economic status was nearly equal, with 50.1% belonging to the low socio-economic class and 49.9% to the high socio-economic class (Table 1).

Table 2: Awareness of Rheumatic fever/Heart disease among the respondents

Variable	**Frequency (n=553)**	**Percent (%)**
Awareness of Rheumatic fever/heart disease		
Yes	350	63.3
No	203	36.7
Source of information**		
Health worker	282	80.6
Friends	277	79.1
Internet/social media	237	67.7

Television	125	35.7
Newspaper	103	29.4
Radio	82	23.4
Parents/family	54	15.4
Posters/banners	23	6.6
Religious gathering	19	5.4

**multiple responses encouraged

Awareness of ARF

Overall, 63.3% (n=350) of respondents reported being aware of rheumatic fever, while 36.7% (n=203) had no prior awareness. Among those who were aware, the most frequently reported sources of information were health workers (80.6%), friends (79.1%), and the internet/social media (67.7%). Other sources included television (35.7%), newspapers (29.4%), radio (23.4%), parents or family members (15.4%), posters or banners (6.6%), and religious gatherings (5.4%). Multiple responses were allowed for this variable (Table 2).

Table 3: Knowledge of Rheumatic fever among the respondents

Variable	**Frequency (n=553)**	**Percent (%)**
The prevalence of Rheumatic fever is high	Yes	210 (38.0)
Shortness of breath is a symptom of Rheumatic fever	Yes	452 (81.7)
Joint pain/swelling is a symptom of Rheumatic fever	Yes	527 (95.3)
Leg swelling is a symptom of Rheumatic fever	Yes	449 (81.2)
Skin rash is a symptom of Rheumatic fever	Yes	226 (40.9)
Sore throat is a symptom of Rheumatic fever	Yes	521 (94.2)
Treatment of sore throat and primary prophylaxis is an ideal preventive measure.	Yes	484 (87.5)

Age group (5-15 years) is more likely to have Rheumatic fever	Yes	511 (92.4)
Treatment is by use of non-steroidal anti-inflammatory drugs, antibiotics and steroids.	Yes	494 (89.3)
The impact of the disease is in poor socio-economic groups	Yes	474 (85.7)
Diagnosis is by history taking and past history of sore throat	Yes	475 (85.9)
Knowledge of Rheumatic fever		
Mean±SD	23.1±5.8	

Knowledge of rheumatic fever

Knowledge of rheumatic fever varied across different domains. Only 38.0% of respondents correctly identified that the prevalence of rheumatic fever is high. However, knowledge of clinical features was generally good. A majority of respondents correctly identified joint pain or swelling (95.3%), sore throat (94.2%), shortness of breath (81.7%), and leg swelling (81.2%) as symptoms of rheumatic fever, while fewer respondents (40.9%) recognized skin rash as a symptom. In terms of prevention and treatment, 87.5% of respondents correctly identified early treatment of sore throat and primary prophylaxis as appropriate preventive measures. Similarly, 89.3% correctly identified the use of non-steroidal anti-inflammatory drugs, antibiotics, and steroids as treatment modalities. Most respondents (92.4%) correctly identified that children aged 5–15 years are at higher risk of developing rheumatic fever, while 85.7% recognized that the disease disproportionately affects individuals from lower socio-economic groups. In addition, 85.9% correctly identified that diagnosis involves clinical history, including a history of sore throat. The mean knowledge score was 23.1 ± 5.8 (Table 3).

Table 4: Correlation matrix of variables

	Correlation coefficient r, p value, (n=553)	
Variable	**Age of respondents in years**	**Knowledge of Rheumatic fever/heart disease (total score)**
Age of respondents in years	1	

Knowledge of Rheumatic fever/heart disease (total score)	r=-0.027 p=0.532	1

Correlation between age and knowledge of rheumatic fever

There was no statistically significant correlation between age (in years) and knowledge of rheumatic fever ($r = -0.027$, $p = 0.532$), indicating that age was not linearly associated with knowledge scores among respondents (Table 4).

Table 5: Comparison of mean scores of knowledge of Rheumatic fever/heart disease

Variable	**Sample size (n=553)**	**Mean±SD**	**Student t p-value**	
Age of respondents in groups				
<15 years	(288)	23.6±4.7	2.355	0.019
≥15 years	(265)	22.5±6.7		
Gender				
Male	(194)	23.4±5.8	0.991	0.322
Female	(359)	22.9±5.8		
Marital status				
Single	(525)	23.0±5.8	1.534	0.126
Married	(28)	24.7±4.4		
Class of study				
Junior Secondary School	(282)	24.3±4.1	5.024	<0.001
Senior Secondary School	(271)	21.8±6.9		
Educational Attainment of Father				
Primary education and less	(120)	22.9±5.8	9.475*	<0.001
Secondary education	(158)	21.6±6.1		

Tertiary education	(275)	24.0±5.4		
Educational Attainment of Mother				
Primary education and less	(67)	22.7±5.5	15.679*	<0.001
Secondary education	(166)	21.2±6.4		
Tertiary education	(320)	24.2±5.2		
Employment status of Father				
Unemployed	(23)	22.1±6.5	1.038*	0.355
Self-employed	(285)	22.9±5.6		
Paid employment	(245)	23.4±5.9		
Employment status of Mother				
Unemployed	(21)	20.7±7.3	7.056*	0.001
Self-employed	(258)	22.4±6.1		
Paid employment	(274)	24.0±5.2		
Location				
Urban	(253)	22.4±4.7	2.722	0.005
Rural	(300)	23.7±6.5		
Family socio-economic status				
Low socio-economic class	(277)	22.2±6.1	3.774	<0.001
High socio-economic class	(276)	24.0±5.3		

*Analysis of variance F.

Comparison of mean knowledge scores across socio-demographic variables

The mean knowledge score was significantly higher among respondents aged less than 15 years (23.6 ± 4.7) compared with those aged 15 years and above (22.5 ± 6.7) (t = 2.355, p = 0.019).

There was no statistically significant difference in mean knowledge scores by gender (p = 0.322) or marital status (p = 0.126). Respondents in junior secondary school had significantly higher mean knowledge scores (24.3 ± 4.1) compared to those in senior secondary school (21.8 ± 6.9) (t = 5.024, p < 0.001). Parental education showed significant associations with knowledge scores. Respondents whose fathers had a tertiary education had higher mean scores (24.0 ± 5.4) compared with those whose fathers had secondary education (21.6 ± 6.1) or primary education and less (22.9 ± 5.8) (F = 9.475, p < 0.001). Similarly, respondents whose mothers had a tertiary education had the highest mean knowledge scores (24.2 ± 5.2), while those whose mothers had secondary education had the lowest (21.2 ± 6.4) (F = 15.679, p < 0.001). Maternal employment status was also significantly associated with knowledge scores (F = 7.056, p = 0.001), with higher scores observed among respondents whose mothers were in paid employment. However, paternal employment status was not significantly associated with knowledge (p = 0.355).

Respondents residing in rural areas had significantly higher mean knowledge scores (23.7 ± 6.5) compared to urban residents (22.4 ± 4.7) (t = 2.722, p = 0.005). Additionally, respondents from the higher socio-economic class had significantly higher knowledge scores (24.0 ± 5.3) compared with those from the lower socio-economic class (22.2 ± 6.1) (t = 3.774, p < 0.001) (Table 5).

Table 6: Factors associated with knowledge of ARF

Variable	Knowledge of ARF (n=553)		p-value on bivariate analysis	AOR (95% CI)**
	Yes N (%)	No N (%)		
Age of respondents in groups				
<15 years	268 (93.1)	20 (6.9)	0.003	0.9 (0.5- 2.1)
≥15 years	226 (85.3)	39 (14.7)		1
Gender				
Male	173 (89.2)	21 (10.8)	0.931	NA
Female	321 (89.4)	38 (10.6)		
Marital status				
Single	467 (89.0)	58 (11.0)	0.155	1.3 (0.7- 2.5)
Married	27 (96.4)	1 (3.6)	0.212	1
Class of study				
Junior Secondary School	269 (95.4)	13 (4.6)	<0.001	4.9 (2.2- 11.1)
Senior Secondary School	225 (83.0)	46 (17.0)		1
Educational Attainment of Father				
Primary education and less	106 (88.3)	14 (11.7)	0.008	0.5 (0.2- 1.3)
Secondary education	132 (83.5)	23 (16.5)		0.4 (0.2- 0.8)
Tertiary education	256 (93.1)	19 (6.9)		1
Educational Attainment of Mother				
Primary education and less	80 (89.6)	7 (10.4)	0.007	0.9 (0.3- 2.4)
Secondary education	138 (83.1)	28 (16.9)		0.7 (0.4- 1.5)
Tertiary education	296 (92.5)	24 (7.5)		1

Employment status of Father				
Unemployed	18 (78.3)	5 (21.7)	0.151	0.6 (0.2- 2.1)
Self-employed	253 (88.8)	32 (11.2)		0.8 (0.4-1.5)
Paid employment	223 (91.0)	22 (9.0)		1
Employment status of Mother				
Unemployed	17 (81.0)	4 (19.0)	0.092	0.5 (0.1- 2.0)
Self-employed	225 (87.2)	33 (12.8)		0.8 (0.4- 1.5)
Paid employment	252 (92.0)	22 (8.0)		1
Location				
Urban	263 (87.7)	37 (12.3)	0.167	0.5 (0.2- 0.9)
Rural	231 (91.3)	22 (8.7)		1
Family socioeconomic status				
Low socioeconomic class	239 (86.3)	38 (13.7)	0.029	0.7 (0.4-1.4)
High socioeconomic class	255 (92.4)	21 (7.6)		1

NA, Not applicable ** Adjusted odds ratio, 95% confidence interval

Factors associated with knowledge of acute rheumatic fever

On bivariate analysis, age group, class of study, parental education, and socio-economic status were significantly associated with knowledge of acute rheumatic fever. In multivariable logistic regression analysis, the class of study remained an independent predictor of knowledge. Respondents in junior secondary school were nearly five times more likely to have good knowledge compared to those in senior secondary school (adjusted odds ratio [AOR] = 4.9; 95% confidence interval [CI]: 2.2–11.1; $p < 0.001$). Parental education was also associated with knowledge. Respondents whose fathers had secondary education were significantly less likely to have good knowledge compared to those whose fathers had tertiary education (AOR = 0.4; 95% CI: 0.2–0.8).In addition, respondents residing in urban areas were less likely to have good knowledge compared to those residing in rural areas (AOR = 0.5; 95% CI: 0.2–0.9).

Although the age group showed a significant association on bivariate analysis, it was not statistically significant after adjustment. Gender, marital status, and parental occupational status were not significantly associated with knowledge of acute rheumatic fever (Table 6)

Discussion

This study evaluated the level of awareness and knowledge of acute rheumatic fever (ARF) among secondary school adolescents, alongside associated socio-demographic determinants. The findings indicate that although awareness of ARF was relatively high (63.3%), substantial gaps remain in comprehensive knowledge, particularly with respect to the epidemiology of the disease. Notably, only 38.0% of respondents recognized that ARF is highly prevalent, suggesting a limited understanding of its public health significance despite adequate recognition of symptoms and treatment options.

The relatively high level of awareness observed in this study may be attributed to the prominent role of health workers (80.6%), peers (79.1%), and social media (67.7%) as major sources of information. However, the depth and accuracy of information derived from these sources appear suboptimal, which may explain the observed discrepancy between general awareness and in-depth knowledge. This observation is consistent with previous studies that have reported inadequate understanding of ARF despite moderate levels of awareness among adolescents [15–18]. For example, Ray et al. [7] reported that only 29% of respondents demonstrated adequate knowledge of ARF, while Kebede et al. [18] reported an even lower prevalence of 13.3% among school children in Ethiopia. The comparatively higher knowledge level observed in the present study may be attributable to differences in sample size, study population, and socio-demographic characteristics.

In the present study, knowledge of the clinical features of ARF was generally high, with the majority of respondents correctly identifying sore throat (94.2%), joint pain (95.3%), and age susceptibility (92.4%). Similarly, a large proportion demonstrated awareness of appropriate treatment modalities (89.3%) and preventive measures, such as early treatment of sore throat (87.5%). Nonetheless, deficiencies in knowledge regarding disease burden and prevalence suggest that adolescents may not fully appreciate the severity and long-term consequences of ARF, including its progression to rheumatic heart disease (RHD).

Age-related differences in knowledge were observed, with respondents younger than 15 years demonstrating significantly higher knowledge of ARF compared to older adolescents ($p=0.019$). This finding contrasts with conventional expectations and may reflect greater curiosity and receptiveness to health information among younger students, whereas older adolescents may be more preoccupied with academic demands. Educational level also demonstrated a significant association with knowledge. Students in junior secondary school exhibited significantly higher knowledge of ARF compared to those in senior classes ($p<0.001$). Furthermore, parental education—particularly maternal education—was strongly associated with improved knowledge of ARF ($p<0.001$). Respondents whose mothers had attained tertiary education demonstrated the highest knowledge scores, underscoring the influence of parental educational attainment on adolescent health literacy. This finding is consistent with existing evidence suggesting that educated parents are more likely to access, comprehend, and disseminate health-related information to their children [19].

Socio-economic status was also significantly associated with knowledge of ARF, with respondents from higher socio-economic classes demonstrating better knowledge ($p<0.001$). This finding aligns with established literature linking lower socio-economic status, poverty, and overcrowding to both increased risk of ARF and poorer health awareness. However, in contrast to some previous studies [20], this study found that adolescents residing in rural areas had significantly higher knowledge scores compared to their urban counterparts ($p=0.005$). This unexpected finding may be explained by targeted community-based health interventions or increased exposure to the disease in rural settings, which may enhance awareness and knowledge. Additionally, variations in school health programmes may have contributed to this observation.

Clinical Implications

The findings of this study have important clinical and public health implications. Inadequate knowledge of ARF, particularly regarding its burden and complications, may contribute to delayed health-seeking behaviour, missed or late diagnosis, and suboptimal management of streptococcal infections. These factors

may ultimately lead to progression to rheumatic heart disease, a preventable cause of significant morbidity and mortality among adolescents. The observed gap between awareness and actionable knowledge underscores the need for targeted and structured educational interventions aimed at improving understanding, early recognition, and prevention of ARF.

Study Limitations

This study has several limitations. First, it was conducted among school-going adolescents, thereby excluding out-of-school adolescents who may represent a higher-risk population. Additionally, the school-based design within Enugu metropolis may limit the generalizability of the findings to adolescents in other regions of Nigeria, particularly those in rural areas or outside the formal education system. Second, the study did not evaluate broader community-level influences such as the quality of media information, peer dynamics, or exposure to healthcare systems, all of which may influence knowledge acquisition. Third, the cross-sectional design precludes the establishment of causal relationships between socio-demographic factors and knowledge levels.

Conclusion

This study demonstrates that although awareness of acute rheumatic fever among adolescents is relatively high, comprehensive knowledge—particularly regarding disease burden—remains inadequate. Significant socio-demographic disparities in knowledge were identified, influenced by age, educational level, parental education, and socio-economic status. Addressing the gap between awareness and accurate knowledge is essential for improving early recognition, prevention, and control of ARF and its long-term complications.

Declaration

Ethical considerations.

Ethical approval was obtained from the Research and Ethics Committee of Enugu State University Teaching Hospital (Approval No: ESUTHP/C-MAC/RA/034/158; Date: 10/2024

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