Assessing Physical, Mental, Social and Nutritional Health Needs of Students in a Special Needs School in North Central Nigeria

Bilqis Wuraola Alatishe-Muhammad[1*]; Munirat Ayoola Afolayan[2]; Oluwatosin Wuraola Akande[3]; Omorola Motunrayo Adeyemi[3]; Hafsat Abolore Ameen[3]; Oladimeji Akeem Bolarinwa[3]; Ganiyu Adekunle Salaudeen[1,3]; Precious Ebube Anyakorah[4]; David Chinaecherem Innocent[4].

[1]Department of Epidemiology and Community Health, University of Ilorin Teaching Hospital, Ilorin, Nigeria; [2]Nigerian Navy Reference Hospital Ojo, Lagos, Nigeria; [3]Department of Epidemiology and Community Health, College of Health Science, University of Ilorin, Ilorin, Nigeria, and [4]Department of Public Health, Federal University of Technology, Owerri

***Corresponding author**: Alatishe-Muhammad Bilqis Wuraola.

Email: wuraolamohammed63@gmail.com

DOI*:* https://dx.doi.org/10.4314/ajhs.v38i3.12

This work is distributed Open Access under the Creative Commons Attribution 4.0 (CC BY 4.0).
Copyright resides with the authors

Abstract

Background: Four in five hundred children live with disability in developing countries and often experience unmet physical, mental, social and nutritional health needs due to poor access to inclusive education and healthcare. Although school health programs exist, there remains insufficient data on how well these programs meet the health needs of children with disabilities in Nigeria. This study aims to assess the health needs of students in special needs schools in North Central Nigeria.

Methods: A cross-sectional study was conducted among 500 students with visual, hearing, and learning impairments across four special needs schools in North Central Nigeria. A multistage sampling technique was employed for the selection of respondents, and data were collected using a pretested, semi-structured questionnaire, which was used to collect information about the socio-demographic, health needs, factors associated with health needs and physical examination assessment of the students. Each domain was scored using a five-point Likert scale, and total scores were categorised as "adequate" if above the mean and "inadequate" if below the mean. Data were analysed with SPSS version 23.0 using descriptive and inferential statistics with a significance level set at $p < 0.05$.

Results: the mean age of the respondents was 16.4±3.5 years, with a slight male predominance (54%). Overall, 79.2% of students had adequate health needs. Adequacy was highest in mental health needs (90.6%) and lowest in nutritional needs (75.2%). Visually impaired students reported lower participation in physical activities than students with hearing impairment ($p<0.05$), indicating disparities across disability types.

Conclusions: Despite the disability of the students, their health needs were adequately met as more than three-quarters of the respondents had access to adequate health care.

Keywords: *Health Needs, Children with Special Needs, North Central, Nigeria*

[*Afr. J.* Health Sci. 2025;38(3): Article 12. https://doi.org/10.4314/ajhs.v38i3.12]

Introduction

Globally, over one billion people live with disabilities, representing about 15% of the world's population, with the burden rising due to ageing populations and non-communicable diseases.[1] Approximately four in five hundred children in developing countries live with disabilities.[2] While developed nations provide educational, rehabilitative, and social support programmes for persons with disabilities, Nigeria's educational system has given limited attention to children with special needs.[3] These children require tailored educational adjustments and specialised support to address their physical or cognitive challenges. [3–5]

Health needs in this study encompass four interrelated domains: physical, mental, social, and nutritional, which collectively determine the well-being of students with disabilities [4]. Physical needs involve access to

mobility aids and safe environments for physical activity; mental needs relate to emotional stability, self-esteem, and resilience; social needs involve inclusion, participation, and positive peer interaction; while nutritional needs concern adequate diet, feeding assistance, and dietary awareness. [5] These domains are interdependent and shape learning outcomes and overall quality of life.

Despite global recognition of these needs, there remains limited evidence on how they are met in Nigeria, particularly in the North-Central region, where special needs education is under-resourced. This area, comprising both urban and rural communities, has one of the highest concentrations of public special schools in the country, yet data on the adequacy of students' health needs remain scarce.

Children with visual, hearing, or learning impairments often experience poorer health and educational outcomes due to inadequate specialised services and structural barriers.[6] According to Article 25 of the UN Convention on the Rights of Persons with Disabilities (CRPD), persons with disabilities have the right to attain the highest standard of health without discrimination.[7] The developmental needs of these children are further compounded by their impairments, necessitating ongoing health surveillance and tailored interventions. [8]

Children with disabilities are often among the poorest members of society, less likely to attend school, access healthcare, or have their voices heard. [12] Their vulnerabilities also heighten risks of violence and exclusion, particularly during crises. Addressing these challenges requires assistive technologies such as hearing aids, glasses, tape recorders, and adaptive learning tools to promote independence and skill acquisition. [13] Furthermore, inclusive approaches that respect individuality and foster self-esteem are essential for building positive identities and equitable opportunities for participation. [14] This study, therefore, aimed to assess the health needs of students attending schools for special needs in North Central Nigeria.

Methodology

Study design and area

The study was a school-based cross-sectional survey conducted among students attending special needs schools in North Central Nigeria, one of the country's six geopolitical zones comprising six states and the Federal Capital Territory. The region was chosen for its concentration of public special needs schools, which include both primary and secondary sections, with most students in boarding systems. Five schools participated: Kwara State School for Special Needs, Government Special School, FCT UBE School for the Deaf (Kuje), FCT School for Children with Special Needs, and FCT School for the Blind (Garki). Students were clustered within schools, which served as primary sampling units. To enhance representativeness, a design effect of 1.5 was applied to account for intra-cluster variability. Eligible participants were students aged 12 years and above who had been enrolled for at least one academic term, ensuring adequate literacy and cognitive ability for meaningful responses.

Sample size and selection of study participants

The sample size was determined using Fisher's formula, and the prevalence for the sample size calculation based on a similar study (35.5%) [16] conducted in the United States on unmet health service needs among children with developmental disabilities. In the formula Nf = n/1 + (n/N), the value of n was calculated using the formula $n = Z^2 pq/d^2$; Where: n = the desired sample size (for populations less than 10,000), z = the standard normal deviate, set at 1.96, corresponding to 95% confidence level, P = prevalence of 35.5% [17], q = 1.0 – p, and d = degree of accuracy, set at 0.05 for this study. Therefore:

$$n = \frac{(1.96)^2 \times (0.355)(1 - 0.355)}{(0.05)^2}$$

$$n = \frac{3.8416 \times (0.355)(0.645)}{0.0025}$$

$$n = \frac{0.8796}{0.0025}$$

$$n = 351.84$$

$$n = 352$$

To compute nf = n/1+(n/N), nf = minimum sample size when target population is less than 10,000, N = the estimate of children in schools for special needs in North central Nigeria, which was 2763, nf = 352/ 1 + (352/2763), nf = 352.13. Adjustment for non-response, the minimum sample size; N = n/ (100-r %), where r% is the anticipated non-response rate, which was 20% because of the composition of the study group.

Substituting as:

N = 352.13/ (100% - 20%)

= 352.13/ (0.8)

= 440.2

~ 440

To ensure a robust and representative dataset, we rounded up to the nearest multiple of 10, resulting in a final sample size of 500 respondents.

Sampling technique

A multistage sampling technique was used to select 500 respondents for the study. The number of eligible students was determined by proportional allocation using the formula nr=n*s/N.

In the Kwara State School for Special Needs, Ilorin, 156 respondents were selected. The Government Special school had 71 respondents, and three schools in the FCT were also involved, including: 180 respondents in F.C.T UBE School for the Deaf, Kuje; 62 respondents in F.C.T School for Children with Special Needs; 31 respondents in Kuje and F.C.T School for the Blind Children, Garki were studied. These respondents were selected and interviewed.

Within each selected school, proportional allocation was determined using the formula: $n_1 = (N_1/N_t) \times n$; where n_1 represents the number of students selected from each school, N_1 represent the student population in the school, N_t is the total population of participants from all schools, and n is the overall sample size. Thus, students were chosen using systematic random sampling, where class registers served as sampling frames, and the sampling interval was determined by dividing the total number of eligible students by the allocated sample per school, ensuring equal probability of selection across all classes and categories of disability.

Data collection and management

A pretested semi-structured interviewer-administered questionnaire was used for quantitative data from eligible respondents after it was pre-tested at Lokoja School for the Deaf among a total number of fifty respondents. The instrument was adapted from a standardised questionnaire [18,19,20]. This was structured into four sections: socio-demography, physical, mental and social health needs of students. The tool was face-validated after which appropriate amendments were made where necessary. Data were collected by eighteen research assistants who were recruited and trained on the content and administration of the research instruments.

The semi-structured questionnaire comprised four domains, assessing physical, mental, social, and nutritional health needs. Each domain consisted of multiple Likert scale items that were rated from 1 (strongly disagree) to 5 (strongly agree), and domain scores were summed, and the overall health needs score was computed as the mean of the four domains. Respondents with scores above the mean were categorised as having "adequate health needs", whereas those below the mean were classified as "inadequate health needs". The questionnaire was adapted from validated instruments used in prior studies [18,19] and pretested for reliability (Cronbach's alpha = 0.83).

Study population

The study population consisted of students attending five schools for special needs in North Central Nigeria during the academic year 2019/2020. and the inclusion criteria were all students attending schools for special needs in North Central Nigeria, who had been enrolled for at least one term and were twelve (12) years and above. Exclusion criteria involved Students who did not wish to participate in the study, and those who were critically ill at the time of the study.

Data analysis

The data, after being manually checked for possible errors and missing data by the researcher, were entered and analysed using the

IBM SPSS version 23.0. Descriptive statistics (mean, standard deviation, and percentages) summarised the respondents' characteristics and distribution of health needs, whereas inferential statistics included a chi-square test to examine associations between categorical variables, a t-test to compare mean scores, and multivariate regression analysis to identify predictors of adequate health needs. All variables were numerically coded: 1 = adequate, 0 = inadequate. A significant level of $p<0.05$ was adopted.

Ethical consideration

Ethical approval was obtained from the Ethical Review Committee of Blinded for Review (PAN/2019/02/1879). Informed consent and privacy rights were upheld. Parents or guardians provided consent for minors, while students aged 18 and above consented independently after counselling. Collaboration with school staff facilitated 100% participation.

Results

Demographic characteristic

A total of 500 respondents across the 5 schools of special needs participated in the survey, with a response rate of 100%. The mean age of the respondents was 16.4±3.5 years. Respondents in the junior secondary class were more in number, 225(45/100), than those in the primary class, 134(26.8/100). Muslim students were 275 (55/100) and those of the Yoruba ethnic group were 186(37.2/100) respondents, with a slight male preponderance of 270(54/100). The mean length of stay in school was 7.6 ±2.9, with the longest duration being 15 years and the shortest duration being 3 years. (Table 1).

Health needs among respondents

More than three-fourths of the respondents had adequate health needs. A higher proportion of respondents from Kwara had adequate physical needs, 132(84.6/100) and mental needs, 153(98.1/100), than respondents from FCT and Nasarawa. For clarity, "adequate health needs" as used in this section refers to respondents whose overall domain scores (physical, mental, social and nutritional) were above the mean value of the composite Likert scale score, while those below the mean were classified as having "inadequate health needs". The mental needs of the respondents were well catered for as the majority, 453(90.6/100), had adequate mental needs (Table 2).

Table 1
Demographic Characteristics of Respondents

	Socio-demography	Frequency	(%) (N=500)
Age group	12-14	208	(41.6)
	15-16	254	(50.8)
	17-18	25	(5.0)
	>18	13	(2.6)
Gender	Male	270	(54.0)
	Female	230	(46.0)
Class	PRY1-3	33	(6.6)
	PRY4-6	134	(26.8)
	JS1-3	225	(45.0)
	SS1-3	108	(21.6)
Religion	Islam	275	(55.0)
	Christianity	180	(36.0)
	Traditional	45	(9.0)
Ethnic group	Hausa	162	(32.4)
	Yoruba	186	(37.2)
	Ibo	74	(14.8)
	Others	78	(15.6)
Length of stay in school(yrs)	<5	42	(8.4)
	5-10	332	(66.4)
	>10	126	(25.2)

Physical health needs of the respondents

The relatively lower participation of visually impaired students in activities such as grass cutting and walking briskly may be attributed to mobility limitations and environmental safety concerns. Many of these students rely on assistive mobility aids and teacher supervision, which restricts their participation in physically demanding or potentially hazardous outdoor tasks. Conversely, hearing-impaired students who experience fewer mobility challenges tend to engage more actively in such activities. Among the visually impaired respondents, more than half, 57(79.2/100), demonstrated adequate management of their physical needs except in areas of brisk walking, 44(61.1/100), picking of leaves, 30(41.7/100) and grass cutting, 16(22.2/100). (Table 3). Of the learning impaired, less than half, 40(40.8/100), participated in vocational activities, while more than half, 68(69.4/100), participated in sports.
More than half of the hearing impaired, 212 (64.2/100) participated in vocational activities, while three-quarters, 250(75.8/100) participated in sports. A high proportion, 262(79.4/100), cleaned their dormitories themselves, while 217 (65.8/100), engaged in grass cutting (Table 3).

Table 2
Health Needs among Respondents in Schools for Special Needs Based on Scoring System

Variables		Adequate Frequency (%)	Inadequate Frequency (%)
FCT (n= 273)	Physical needs	214(78.3)	59(21.6)
	Social needs	203(74.4)	70(25.6)
	Mental needs	234(85.7)	39(14.3)
	Nutritional needs	214(78.3)	59(21.6)
Kwara (n= 156)	Physical needs	132(84.6)	24(15.4)
	Social needs	139(89.1)	17(10.9)
	Mental needs	153(98.1)	3(1.92)
	Nutritional needs	113(72.4)	43(27.6)
Nasarawa (n=71)	Physical needs	50(70.4)	21(29.6)
	Social needs	60(84.5)	11(15.5)
	Mental needs	66(93.0)	5(7.04)
	Nutritional needs	49(69.0)	22(31.0)
Total (N= 500)	Physical needs	396(79.2)	104(20.8)
	Social needs	402(80.4)	98(19.6)
	Mental needs	453(90.6)	47(9.4)
	Nutritional needs	376(75.2)	124(24.8)

Table 3
Physical Health Needs of the Respondents with Visual, Hearing and Learning Impairment

Physical needs	Visually impaired (n=72) Frequency (%)	Hearing impaired (n=330) Frequency (%)	Learning impaired (n=98) Frequency (%)
Use of library	57(79.2)	259(78.5)	64(65.3)
Use of Conducive toilet facility	51(70.8)	242(73.3)	77(78.6)
Adequate and use of water	56(77.8)	263(79.7)	77(78.6)
Participating in vocational activities	59(81.9)	212(64.2)	40(40.8)
Participating in games	58(80.6)	250(75.8)	68(69.4)
Involvement in exercise	60(83.3)	237(71.8)	70(71.4)
Types of exercise			
Brisk walking	44(61.1)	209(63.3)	65(66.3)
Cleaning of dormitories	58(80.6)	262(79.4)	71(72.4)
Grass cutting	16(22.2)	217(65.8)	66(67.3)
Picking of leaves	30(41.7)	240(72.7)	74(75.5)
Cleaning of bathroom	61(84.7)	260(78.8)	70(71.4)
Dancing	54(75.0)	253(76.7)	78(79.6)

Social health needs

The majority of the visually impaired experienced considerable unmet social health needs (>60%). (Table 4) Only a few 12 (16.7/100) did not have consistent friends. A high proportion, 272(82.4/100) of the hearing-impaired respondents had consistent friends and cared for others, while 213(64.5/100) had a good approach to problems. More than two-thirds, 68(69.4/100) of the respondents with learning impairment had consistent friends, while 76(77.6/100), looked out for other respondents in the school. More than half of the 53 (54.1/100) engaged in conflicts with other respondents. (Table 4).

Mental health needs

The majority, 69(95.8/100) of the visually impaired respondents, did not prefer to be alone but with other respondents. The majority, 283(85.3/100) of the respondents who were hearing impaired preferred to be with other respondents, while a few, 57(17.3/100), worried a lot. (Table 5).

Table 4

Social Health Needs of the Respondents with Visual, Hearing and Learning Impairment

Social needs	Visually impaired (n=72) Frequency (%)	Hearing impaired (n=330) Frequency (%)	Learning impaired (n=98) Frequency (%)
Relating well with others	65(90.3)	293 (88.8)	77(78.6)
Consistency of friends	60(83.3)	272(82.4)	68(69.4)
Caring for other respondents	63(87.5)	272(82.4)	76(77.6)
Being cared for by others	61(84.7)	269(81.5)	69(70.4)
Gains from other respondents	1(84.7)	249(75.5)	65(66.3)
School social environment	66(91.7)	260(78.8)	80(81.6)
Good approach to problems	59(81.9)	213(64.5)	61(62.2)
Completion of assignment with minimal stress	67(93.1)	243(73.6)	63(64.3)
Completion of assignment with minimal anxiety	66(91.7)	243(73.6)	66(67.3)
Enjoy working in groups	65(90.3)	267(80.9)	73(74.5)
Conflicts with other respondents	29(40.3)	227(68.8)	53(54.1)
Manage conflicts well	62(86.1)	235(71.2)	54 (55.1)

Table 5

Mental Health Needs of the Respondents with Visual, Hearing and Learning Impairment

Mental needs	Visually impaired(n=72) Frequency (%)	Hearing impaired (n=330) Frequency (%)	Learning impaired (n=98) Frequency (%)
Complain of aches/pains	1(1.4)	24(7.3)	6 (6.1)
Prefers to be alone	3(4.2)	47(14.2)	10(10.2)
Tired easily	9(12.5)	49(14.8)	14(14.3)
Worries a lot	11(15.3)	57(17.3)	19(19.4)
Restlessness	5(6.9)	44(13.3)	14(14.3)
Gets into trouble with teachers	7(9.7)	62(18.8)	16(16.3)
Not interested in school	9(12.5)	51(15.5)	17(17.3)
Daydreams a lot	5(6.9)	42(12.7)	14(14.3)
Gets distracted easily	6(8.3)	54(16.4)	15(15.3)
Feel unhappy	7(9.7)	47(14.2)	11(11.2)
Feels hopeless	9(12.5)	37(11.2)	8(8.2)
Lacks concentration	3(4.2)	52(15.8)	15(15.3)
Less interested in friends	7(9.7)	29(8.8)	17(17.3)
Fight with other children	6(8.3)	40(12.1)	16 (16.3)
Misses classes	6(8.3)	47(14.2)	17(17.3)
Trouble sleeping	8(11.1)	60(18.2)	22(22.4)
Prefers to be with parents	14(19.4)	72(21.8)	19(19.4)
Taking unnecessary risk	3(4.2)	53(16.1)	38(38.8)
Do not obey rules and regulations	23 (31.9)	141 (42.7)	28 (28.6)
Blame others for problems	6(8.3)	55(16.7)	12(12.2)
Taking things not for one	2(2.8)	34(10.3)	9(9.2)
Refusal to share	4(5.6)	30(9.1)	3 (3.1)

More than half, 189(57.3/100) of the hearing-impaired obeyed the rules and regulations of the school. The majority, 81(82.7/100), of the learning impaired respondents are interested in school, more interested in friends and do not miss classes (Table 5).

Disability associated with health need among respondents

A slide through the physical needs in relation to their disabilities gave a different picture, as a lower proportion of the visually impaired students, a few of the learning impaired, but a higher proportion of hearing impaired had their physical needs adequately met, and these differences were statistically significant($p<0.001$) (Table 6).

Predictors of health needs adequacy

A multiple linear regression model was fitted to identify predictors of overall health needs adequacy among students. The model explained 41.3% of the variance of the adequate health needs ($R^2 = 0.413$, $p<0.001$), disability type ($\beta = 0.42$, $p = 0.001$), school location ($\beta = 0.31$, $p = 0.004$), and duration of stay in school ($\beta = 0.27$, $p = 0.011$) were significant predictors of health needs adequacy. Gender, age and class level were not statistically significant ($p>0.05$). This finding suggests that structural and environmental factors play a greater role than demographic variables in determining students' health outcomes.

These study findings explain significant differences in adequate health needs among students with various types of disability. The regression model confirms that the disability type, school location, and duration of school attendance are independent predictors of health outcomes, accounting for over 41% of the observed variance. This implies that contextual and institutional factors, such as availability of assistive resources, environmental accessibility and exposure duration to structured support, strongly influence how effectively students' physical, mental, social and nutritional health needs are met. The absence of significant associations with demographic variables like age and gender further highlights the systemic nature of these disparities. These results provide a foundation for the subsequent discussion, which interprets the observed pattern in light of existing literature and policy implications.

Discussion

Three components of health needs: physical, social, and mental, were studied, derived from the conceptual framework adapted from the ICF guidelines for children with additional health and developmental needs. [21] A higher proportion of students had adequate health needs, with mental needs being the most satisfactorily met, reflected in the generally good well-being of students in the study area.

Table 6

Disability Associated with Health Need among Respondents Based on Scoring System

Variables	Adequate Frequency (%)	Inadequate Frequency (%)	X^2	p-value
Physical Needs			17.248	*0.002*
Visual (n=72)	56 (77.8)	16 (22.2)		
Hearing (n=330)	263 (79.7)	67 (20.3)		
Learning (n=98)	77 (78.6)	21 (21.4)		
Social needs			11.958	*0.018*
Visual (n=72)	60 (83.3)	12 (16.7)		
Hearing (n=330)	269 (81.5)	61 (18.5)		
Learning (n=98)	73 (74.5)	25 (25.5)		
Mental needs			17.084	*0.002*
Visual (n=72)	71 (98.6)	1 (1.4)		
Hearing (n=330)	302 (91.5)	28 (8.5)		
Learning (n=98)	80 (81.6)	18 (18.4)		
Nutritional needs			14.548	0.006
Visual (n=72)	69 (95.8)	3 (4.2)		
Hearing (n=330)	300 (90.9)	30 (9.1)		
Learning (n=98)	84 (85.7)	14(14.3)		

This finding contrasts with a Ugandan study [7], which reported that children with disabilities were unable to meet their health needs. In contrast, students in this study appeared to have access to safer and healthier environments that supported their overall development. However, findings differ from those in Kenya [22], where children with special needs were found to live in unsafe and disadvantaged environments.

These differences likely reflect contextual and policy variations. In Uganda, community-based rehabilitation and inclusive education are more integrated into public health policy [23], while in Nigeria, such programmes remain underfunded and fragmented. Kenyan schools benefit from targeted government grants and teacher training [24], improving service adequacy, whereas Nigeria struggles with inconsistent implementation of inclusive education and limited accessibility infrastructure.

Findings showed statistically significant differences ($p<0.001$) among disability types: fewer visually and learning-impaired but more hearing-impaired students had their physical needs met. Prior studies indicate that hearing-impaired students often access services better when communication tools like sign language or assistive technology are available [25], while visually impaired students face greater challenges due to limited mobility tools and accessibility barriers. These results align with the ICF framework, which emphasises that institutional and environmental factors, rather than impairments alone, shape health outcomes. [26] Lower participation in physical activities among visually impaired students may be due to environmental safety concerns, while hearing-impaired students benefit from inclusive recreational and peer-based interactions.

The study also found significant variation in social needs ($p=0.018$), with visually impaired students reporting greater satisfaction than those with hearing or learning impairments. This may reflect lower social expectations among the visually impaired. [27] Conversely, students with learning disabilities often face communication difficulties and challenges in interpreting social cues. [28] Mental health needs were largely met across all disability types ($p=0.002$), possibly because students did not perceive themselves as disabled. This aligns with Martin [29], who observed that positive self-concept and reduced stigma enhance mental well-being and reduce anxiety or depression. In essence, the findings underscore the need to operationalise the Discrimination Against Persons with Disability (Prohibition) Act, 2019, through measurable, school-based interventions. Key actions include increased budgetary allocation for special needs schools, regular health and mental screening, and capacity building for teachers and caregivers. Interventions should also be tailored to specific disability categories, addressing distinct psychosocial and environmental barriers to ensure equitable inclusion and improved health outcomes for all students with special needs.

Limitations of the study

This study has several limitations. Its cross-sectional design prevents establishing causality between school factors and health outcomes, so findings should be interpreted as correlations. Although the sample size was adequate, its restriction to North Central Nigeria limits generalisability to other regions. The 100% response rate, while desirable, may have introduced social desirability bias despite assurances of confidentiality. Only three disability types: visual, hearing, and learning, were included, excluding physical and developmental disabilities, thereby limiting broader comparisons. Communication barriers, particularly among sign language users, and reliance on self-reported data may have affected response accuracy and introduced recall or perception bias.

Conclusion

This study assessed the adequacy of physical, mental, social, and nutritional health needs among students in special needs schools across North Central Nigeria. Most students had adequate health needs, though differences existed by disability type and school location. Hearing-impaired students reported higher

adequacy, while visually and learning-impaired students showed lower participation in physical and nutritional activities. Institutional and environmental factors, rather than individual characteristics, were key determinants of health outcomes. The findings highlight the need for targeted interventions, improved infrastructure and nutrition programmes, teacher capacity building, and stronger inter-ministerial collaboration. Implementing and monitoring the Discrimination Against Persons with Disabilities (Prohibition) Act 2019 through inclusive school-based health initiatives is essential to promote equity, accessibility, and better health outcomes for students with special needs in Nigeria.

Authors contribution

- Bilqis Wuraola Alatishe-Muhammad: Conceptualisation, Protocol development, data collection, Project coordination.
- Munirat Ayoola Afolayan: Original draft preparation, Literature search.
- Oluwatosin Wuraola Akande: Supervision, Original draft preparation, Data Analysis
- Omorola Motunrayo Adeyemi: Data Analysis
- Hafsat Abolore Ameen: Interpretation of result, Original draft preparation,
- Oladimeji Akeem Bolarinwa: Data Collection
- Ganiyu Adekunle Salaudeen: Data collection
- Precious Ebube Anyakorah: Investigation, Data Analysis, writing – editing.
- David Chinaecherem Innocent: Methodology, writing – editing.
- Final Approval of Manuscript: All authors
- All authors contributed to the review process.

Availability of data and materials. Data will be made available upon request by the corresponding author

Competing interests. Authors have declared that they have no competing interests

Source of funding. No funds were received for this study

References

1. Graaf, G. and Gigli, K., 2022. Care coordination and unmet need for specialised health services among children with special healthcare needs in the USA: results from a cross-sectional analysis of the national survey of children with special healthcare needs. *BMJ open*, *12*(11), p. e063373.
2. Zainol, M., Mazlan, I.R., Azizan, C.R., Misron, S. and Idris, R., the effectiveness of early detection and intervention programme for 4-6 years old preschoolers with developmental delays in malaysia.
3. Alatishe-Muhammad, B.W., Olubiyi, O.A., Afolayan, M.A., Adeyemi, O.M., Ameen, H.A., Bolarinwa, O.A., Salaudeen, G.A. and Olubiyi, O.M., 2022. Qualitative Study on Needs of Children in Schools for Special Needs among the Teachers in North Central Nigeria.
4. Hegarty S. Education of children with disabilities. Spec Needs Educ. 2019;16–28.
5. Kyomugisha, K., 2022. *Teaching and Learning Difficulties that hinder academic performance of students with mental challenges* (Doctoral dissertation).
6. WHO. Summary World Report on Disability. World Health[Internet]. 2011;1–24. Available from:www.who.int/about/licensing/copyright_form/en/index.html%0Ahttp://www.larchetoronto.org/w ordpress/wp-content/uploads/2012/01/launch-of-World-Report-on-Disability-Jan-27-121.pdf
7. Strickland B, McPherson M, Weissman G, Van Dyck P, Huang ZJ, Newacheck P. Access to the Medical Home: Results of the National Survey of Children with Special Health Care Needs. Pediatrics. 2004;113(5 II):1485–92. PMID: 15121916
8. Gary. L, Albrecht. K D SMB. Handbook of Disability Studies. Sage; 2001.
9. Badey PB, Brown EA. Educating the Physically Challenged in the Nigerian Society: A. (1996):1–6.
10. Lewis C, Robertson AS, Phelps S. Unmet dental care needs among children with special health care needs: Implications for the medical home. Pediatrics. 2005;116(3). DOI: 10.1542/peds.2005-0390
11. Amucheazi C, Nwankwo CM. Accessibility to infrastructure and disability rights in Nigeria: an analysis of the potential of the discrimination against

persons with disability (prohibition) act 2018. Common Law Bull [Internet]. 2020 Oct 1;46(4):689–710. Available from: https://doi.org/10.1080/03050718.2020.1781674

12. Stein R E. Workshop on Disability in America a new look [Internet]. Washington DC: Academy of Medicine; 2006. 143–156 p. Available from: https://www.nap.edu/download/11579
13. Ololube NP, Egbezor DE, Kpolovie PJ. Education policies and teacher education programs: meeting the millennium development GOALS. 2008; 9:21–34.
14. Fakolade OA, Tella A. Attitude of teachers towards the inclusion of special needs children in general education classroom: the case of teachers in some selected schools in. 2009;1(3).
15. UNCEF. A study on children with disabilities and their right to education: The Union of Comoros. 2016.
16. Lindly OJ, Chavez AE, Zuckerman KE. Unmet Health Services Needs among US Children with Developmental Disabilities: Associations with Family Impact and Child Functioning. J Dev Behav Pediatr. 2016;37(9):712–23. DOI: 10.1097/DBP.0000000000000363
17. Pourhoseingholi MA, Vahedi M, Rahimzadeh M. Sample size calculation in medical studies. Gastroenterol Hepatol from Bed to Bench. 2013;6(1):14–7.
18. Omage K, Omuemu VO. Assessment of dietary pattern and nutritional status of undergraduate students in a private university in southern Nigeria. Food Sci Nutr. 2018;6(7):1890– 7. DOI: 10.1002/fsn3.759
19. Kuponiyi OT, Amoran OE, Kuponiyi OT. School health services and its practice among public and private primary schools in Western Nigeria. BMC Res Notes. 2016;9(1):1–10. DOI: 10.1186/s13104-016-2006-6
20. Idemudia. E S. Mental Health and Psychotherapy through the eyes of culture: Lessons for African Psychotherapy. The unifying aspects of cultures. 2004:230-2tle. 2004; 2:230.
21. Ekpenyong O. Community-Based Rehabilitation Services and Livelihood Enhancement for Persons with Disabilities in Nigeria: A Case Study of Akwa Ibom State. 2017;8(1):62–77.
22. Natalie. L JB. What makes us healthy? An introduction to the social determinants of health. 2018.
23. Ochola, E.A., Elliott, S.J. and Karanja, D.M., 2021. The impact of neglected tropical diseases (NTDs) on women's health and wellbeing in sub-Saharan Africa (SSA): a case study of Kenya. *International journal of environmental research and public health*, *18*(4), p.2180.
24. Ohba, A. and Malenya, F.L., 2022. Addressing inclusive education for learners with disabilities in the integrated education system: the dilemma of public primary schools in Kenya. *Compare: A Journal of Comparative and International Education*, *52*(1), pp.19-36.
25. Abdul-Kadir SI. Coping with human rights abuses among persons with disabilities in Wa west district. 2024
26. McLinden M, Douglas G, Hewett R, Cobb R, Keil S, Lynch P, Roe J, Thistlethwaite JS. Promoting equitable access to education for children and young people with vision impairment: A route-map for a balanced curriculum. Routledge; 2022 Sep 30.
27. Ahmed I. Mathematics Education from a Non-Visual and Disability Studies Perspective: Experiences of Students, Families, and Educators. The Ohio State University; 2020.
28. Riddick B, Fawcett A. Living with dyslexia: The social and emotional consequences of specific learning difficulties/disabilities. Routledge; 2012 Oct 12.
29. Martin JM. Stigma and student mental health in higher education. Higher Education Research & Development. 2010 Jun 1;29(3):259-74.