American Journal of Educational Research, 2019, Vol. 7, No. 7, 499-508
Available online at http://pubs.sciepub.com/education/7/7/10
Published by Science and Education Publishing
DOI:10.12691/education-7-7-10

School Health Program in Nigeria: A Review of Its Implementation for Policy Improvement

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Received May 18, 2019; Revised June 24, 2019; Accepted July 14, 2019

Abstract **Background**: The School Health Program (SHP) contributes to overall goals and purposes of health and education of the school-age children who constitute about 23% of Nigerian population. Its effective implementation is enhanced by school health policy which provides the standards/guidelines for its practices and procedures. The National School Health Policy (NSHPo) in Nigeria was adopted in 2006 to achieve these purposes. Several studies had reviewed different components of the program in different aspectsparts of the country with varying findings but no countrywide report exists. It is essential to ascertain the present state of the SHP implementation in Nigeria by pooling available relevant studies for evidence-based decision making. The purpose of this review paper is to synthesize available information on implementation of the program across Nigeria for the purpose of policy review and program improvement. **Methods**: A comprehensive review of relevant literature was done to identify the implementation of the SHP across the country. Relevant implementation drivers were also reviewed. **Results**: The implementation of SHP across the country was sub-optimal. **Conclusion**: The SHP in Nigeria has largely remained at policy level with minimal implementation. **Recommendation**: There is a need to re-establish or strengthen the program in the country. There is also a need to review and redefine stakeholders' participation for effective coordination. This may call for policy review and/or change.

Keywords: *school health program, school health policy, school health service, healthful school environment, Nigeria*

Cite This Article: Oluyinka Dania, and Ayodeji Matthew Adebayo, "**S**chool Health Program in Nigeria: A Review of Its Implementation for Policy Improvement." *American Journal of Educational Research*, vol. 7, no. 7 (2019): 499-508. doi: 10.12691/education-7-7-10.

1. Introduction

The reality of the double burden of disease in Nigeria, in the face of weakened health care system calls for cost effective sustainable measures of addressing communicable and non-communicable diseases in the country. The School Health Program (SHP) has been suggested as a key component of national health promotion program because when integrated across risk factors and diseases, it rightly addresses the double burden [1]. It also provides the opportunity to ensure life cycle approach required for child development as it complements maternal and child health services [2]. The SHP provides a huge opportunity and most cost effective investment a nation can make to improve education and health [3,4]. Coverage of the school system is often superior to health system, coupled with extensive skilled workforce and strong community relationship [4], hence its potential role in optimising the health system. The SHP is therefore an important component of the overall health care delivery system of any country [5]. It comprises of all projects/activities in the school environment which contribute to the understanding, maintenance and improvement of the health of the school community [5]. It is geared towards protecting and improving the health status of the school community to enable them benefit maximally from the school system [5]. Next to the family, the school is the primary institution responsible for the development of young people all over the world [5].

The school has direct contact with vast majority of the nation's young people aged 5-17 years, for about 6 hours a day, and for up to 13 critical years of their social, psychological, physical, and intellectual development [5]. School-age children constitute about 23% of the population of the average Nigerian community. School-age is a period of rapid growth and development (formative period). Although, largely dependent and not considered productive in terms of income generation, the health status of the school-age and indices are used to determine a nation's state of development [6]. The health habits inculcated in them can be carried on to adulthood. The health of young people is strongly linked to their academic success, and their academic success is strongly linked to their health [7,8].

School health promotes growth and development of every child taking into consideration his/her health needs

[9]. It creates awareness of the collaborative efforts of the school, home and the community in health promotion. It aids development of health consciousness among the children. It also creates awareness on the availability and utilization of various health related resources in the community [9]. It builds the skills of learners and staff for health promotion in the school community.

Various models of the SHP have been proposed: the traditional 3-component model or historical model (1880-1980), the comprehensive School Health Program model (CSHP) or Coordinated School Health Program or 8-component model (1980s) and the focusing Resources on Effective School Health (FRESH) model (2000) [10]. However, the National School Health Policy (NSHPo) in Nigeria describes a 5-component model. This paper presents the review of implementation of the SHP in Nigeria, using the NSHPo as a guide.

1.1. Overview of the NSHPo

Lack of standards to guide SHP in Nigeria noted by National School Health Association, development partners, Ministry of Health and Ministry of Environment necessitated the formulation and adoption of the NSHPo in 2006. The NSHPo document has five chapters. The first chapter provides the background information placing the document as a national framework for the formulation, co-ordination, implementation and effective monitoring and evaluation of SHP, including roles of different stakeholders [9]. The vision statement is to promote health of learners to achieve education for all and health for all in Nigeria [9]. The mission statement is to put in place adequate facilities, resources and programs that will guarantee physical and mental health, social well-being and the safety and security of the school community which will promote the learning outcomes of the child [9]. It also states two policy goals: enhancing quality of health in the school community and creating an enabling environment for inter-sectoral partnership. There are six policy objectives: provision of necessary legal framework for SHP implementation; machinery set up for co-ordination of efforts of the community, government and non-governmental organisations; guide the provision of appropriate professional services by stakeholders; promote the teaching of skill-based health education; facilitate effective monitoring and evaluation and set up modalities for sustainability of the SHP.

The second chapter provides the policy framework. It describes the scope of the SHP to include: School Health Services (SHS), Healthful School Environment (HSE), School Feeding Services (SFS), Skilled Based Health Education (SBHE) and School, Home and Community Relationships (SHCR). School Health Services include pre-enrolment medical examination for pupils, pre-employment medical examination for teachers, periodic medical inspection, health education, environmental sanitation, nutritional services, de-worming programme, provision of first aid materials, collection of data on medical treatments and maintenance of sickness absence records. School Feeding Services include provision of, at least, one adequate meal a day to school children, adequate sanitation and hygiene practices among food handlers including routine medical examination and vaccination, food fortification and supplementation, regular de-worming and promotion of health related-school policies.

Skill-Based Health Education includes personal hygiene, prevention of diseases e.g. HIV, mental & social health, first aid services, safety education, mental health, nutrition education, environmental sanitation, substance abuse and family life education. Healthful School Environment includes location away from potential environmental hazards, adequate buildings/classrooms, lighting, ventilation, adequate and appropriate furniture for learners and staff. It also includes gender sensitive latrines and urinals, adequate safe water supply, sanitation facilities for use in schools and proper drainage and waste disposal. School, Home and Community Relationships entail home visits by teachers, school nurses and social workers, regular visit of parents to school, regular communication of the health status of the learner to the home by the school health personnel and the teachers, active participation of the school in community outreach activities and campaigns.

The third chapter provides the institutional framework. The different stakeholders for the implementation of the NSHPo were listed with their roles. The stakeholders include: The Government (Federal, State and Local); Ministries of Education, Health, Environment, Water Resources, Agriculture and Rural Development, Housing and Urban Development, Works, Information, Sports and Social Development, Women Affairs; Communities; Civil Society Organization, Organized Private Sector and International Development Partners. Nine school health committees were listed with their responsibilities and designated members.

The fourth chapter provides a guide on implementation strategies. The strategies are aimed at enhancing development, realization and sustainability of the SHP. The strategies include planning; capacity building; partnership and collaboration; advocacy and resource mobilization; resource and knowledge sharing.

The last chapter provides clarity on funding mechanisms. Principles of sustainability stated include: beneficiary involvement from the planning to the execution stage; stimulation of community participation and involvement; prudent, transparent and accountable utilization of funds; due process in the award of contracts and rendering of statements of funds to the appropriate accounting officer. Sources of funding were stated as government budgetary allocation through ministries of education and other relevant ministries, agencies and parastatals. Other sources listed include international development partners, donor agencies, civil society organizations, Organized Private Sector, community, individuals and philanthropists.

The policy framework described five components but most of the studies conducted were on three or fewer components. In addition, several studies conducted to evaluate implementation of the SHP vary in scope and contents with varying findings. There is therefore a need to synthesize the results for the purpose of policy review and program improvement.

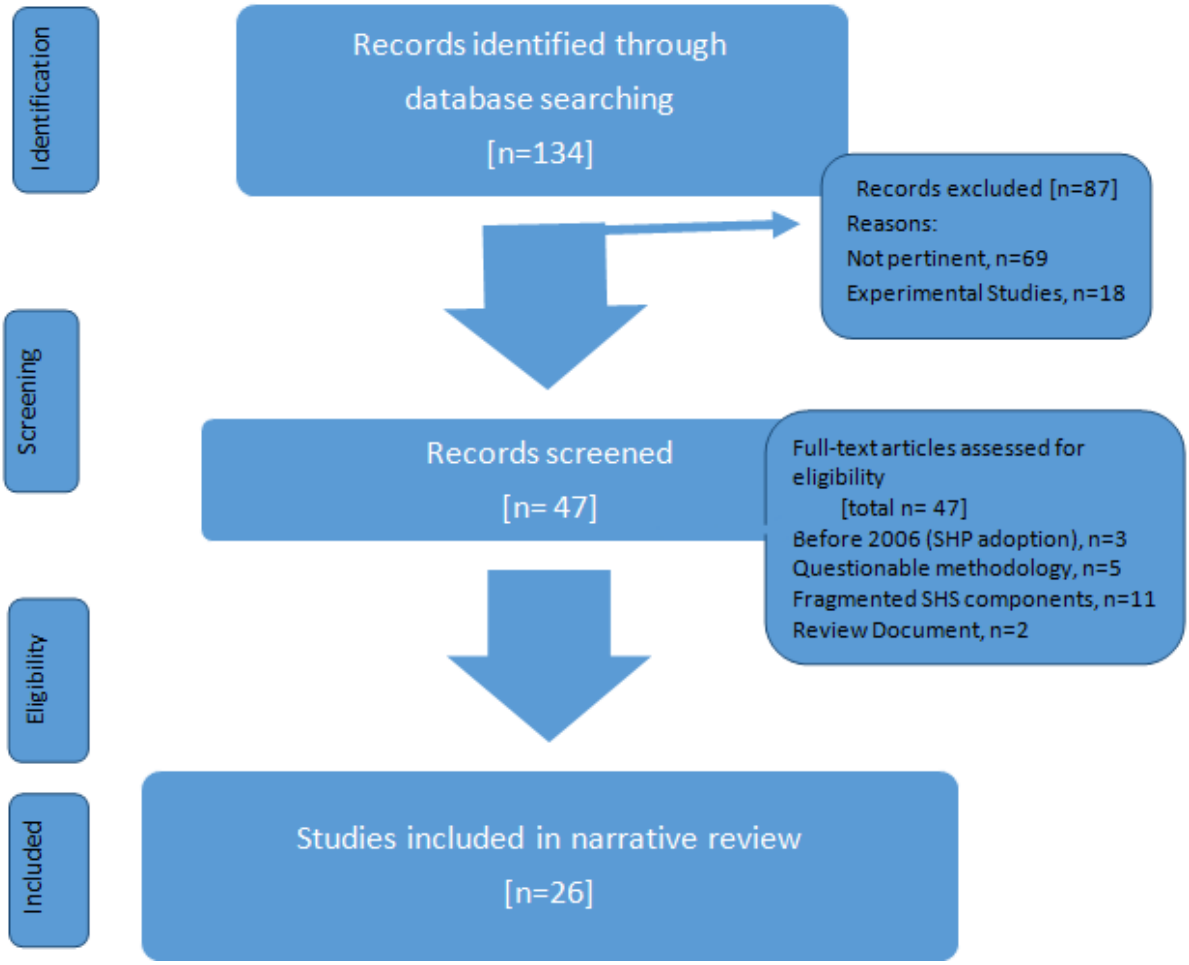

Figure 1. Schematic Diagram of the Steps of the Narrative Review

2. Materials and Methods

The articles used for this review covered a period of 2006 (when NSHP was approved and adopted) to 2019. Studies eligible for inclusion are those that described implementation of any of the SHP components in Nigeria. The articles were retrieved following extensive literature search using the following search engines or databases: Google, Google scholar, Medline, Elsevier, Medscape, eMedicine and PubMed. The literature search was conducted using the following keywords: 'school health', 'school health policy', 'school health program', 'school health service', 'healthful school environment', 'school feeding service', 'skill based health education', 'school home community relationship', 'implementation' and 'Nigeria'. Overall 134 articles were retrieved, out of which 47 were selected for full text assessment (See Figure 1). A total of 26 met all the inclusion criteria. Experimental studies and review papers were not included. Others were excluded because of questionable methodology.

3. Results

A total of 26 studies met the inclusion criteria. Majority 17 (65.4%) of the studies were conducted in South West Nigeria. The component of SHP assessed by most studies is the SHS (50%). The other components were also assessed: HSE (38%), SFS (35%), SBHE (23%) and SHCR (8%). The SHCR was assessed by only two studies and these were the only two that assessed all the components of the SHP.

Table 1. Summary of Articles Included in the Review

S.No	Geopolitical Zone	Title of Study	Authors	Year of Publication	Type of School Assessed	School Health Program Component Assessed
1.	South West	Helminthiasis and Hygiene Conditions of Schools in Ikenne, Ogun State, Nigeria [11]	Uwem Friday Ekpo Simon Nnayere Odoemene Chiedu Felix Mafiana Sammy Olufemi Sam-Wobo	2008	Primary Public Private	SFS, HSE
2.	South West	Assessment of the Food Habits and School Feeding Program of Pupils in a Rural Community in Odogbolu Local Government Area of Ogun State, Nigeria [12]	J.O Olusanya	2010	Primary Public Private	SFS

S.No	Geopolitical Zone	Title of Study	Authors	Year of Publication	Type of School Assessed	School Health Program Component Assessed
3.	South West	Evaluation of School Health Services in Nomadic Primary Schools in Southwestern Nigeria [13]	A. Ibhafidon A.U. Ejifugha	2012	Nomadic primary schools	SHS
4.	South West	A Study of the Primary School Environment in a Local Government Area, South West Nigeria [14]	Oladele S Olatunya Saheed B Oseni Olorunfemi Ogundele Oyeku A Oyelami	2014	Primary Public Private	HSE
5.	South West	Practices, Scope and Determinants of School Health Services in Osun State, Nigeria [15]	O. L. Abodunrin O. A. Adeoye, A. A. Adeomi F. F. Osundina O. R. Ilori	2014	Primary Secondary Public private	SHS, HSE
6.	South West	A Qualitative Study on Status of Implementation of School Health Program in South Western Nigeria: Implications for Healthy Living of School Age Children in Developing Countries [5]	Oluwafemi M. Ademokun Kayode O. Osungbade Taiwo A. Obembe	2014	Secondary Public	SHS, SFS, HSE, SBHE, SHCR
7.	South West	An evaluation of school health services in Sagamu, Nigeria [16]	OA Oyinlade OO Ogunkunle DM Olanrewaju	2014	Primary Secondary Public private	SHS, SFS
8.	South West	Health instruction in Nigerian schools: what are the missing links? [17]	Oladele Simeon Olatunya Saheed Babajide Oseni Oyeku Akibu Oyelami Caleb Adegbenro Nwadiuto Akani	2014	Primary Public private	SBHE
9.	South West	School Health Services in Nigeria: A sleeping giant? [18]	Oladele Olatunya Saheed Oseni Abiola Olukayode Olaleye Oyelami O	2015	Primary Public private	SHS
10.	South West	Knowledge of School Health Program among Public Primary School Teachers in Oyo State, South-West Nigeria: A Rural-Urban Comparative Study [19]	Adebayo A.M Onadeko M.O	2015	Primary Public Rural/Urban	Knowledge
11.	South West	Knowledge, attitude and practice of school health among primary school teachers in Ogun State, Nigeria [20]	Odeyemi KA Chukwu EE	2015	Primary Public	KAP
12.	South West	Role perception of public primary schoolteachers regarding the school health program in Oyo State, south-western Nigeria: a rural–urban comparative study [21]	Ayodeji M. Adebayo Onadeko M. O	2015	Primary Public Rural/Urban	Perception
13.	South West	Quality of Implementation of the School Health Program in Oyo State, South-West Nigeria: A Rural-Urban Comparative Survey [22]	Ayodeji M. Adebayo Eme T. Owoaje	2016	Primary Public	SHS, HSE, SBHE
14.	South West	School health services and its practice among public and private primary schools in Western Nigeria [23]	Olugbenga Temitope Kuponiyi Olorunfemi Emmanuel Amoran Opeyemi Temitola Kuponiyi	2016	Primary Public Private	Knowledge, SHS
15.	South West	Head Teachers' Perception and Practice about School Feeding Services in Public and Private Primary Schools in Ogun State, Nigeria [24]	Olorunfemi Emmanuel Amoran Olugbenga Kuponiyi Opeyemi Kuponiyi	2016	Primary Public Private	SFS
16.	South West	Awareness and knowledge of National School Health Policy and School Health Programme among public secondary school teachers in Ibadan metropolis [25]	Taiwo A. Obembe Kayode O. Osungbade Oluwakemi M. Ademokun	2016	Secondary	Knowledge
17.	South West	Quality of implementation of the school health program in a rural district of Oyo State, Nigeria: a public-private comparison [26]	Ayodeji M. Adebayo Olutoyin O. Sekoni Obioma C. Uchendu Oludoyinmola O. Ojifinni Akinwumi O. Akindele Oluwaseun S. Adediran	2018	Primary Public Private Rural	SHS, SFS, HSE, SBHE, SHCR
18.	South East	Assessment of School Health Instruction Implementation in Primary Schools in a Local Community in South-East Nigeria: A Comparative Study between Private and Public Schools [27]	Osuorah DI Chidiebere Ulasi O Thomas Ebenebe Joy Onah K Stanley Ndu K Ikenna Ekwochi Uchenna Asinobi N Isaac	2016	Primary Public Private	SBHE

S.No	Geopolitical Zone	Title of Study	Authors	Year of Publication	Type of School Assessed	School Health Program Component Assessed
19.	South East	The Status of School Health Services: A Comparative Study of Primary Schools in a Developing Country [28]	Osuorah DI Chidiebere Ulasi O Thomas, Ebenebe Joy, Onah K Stanley, Ndu K Ikenna, Ekwochi Uchenna, Asinobi N Isaac	2016	Primary Secondary Public	SHS
20.	South East	School health services in Enugu East, Nigeria: perspectives from a resource-poor setting [29]	Adaobi I. Bisi Onyemaechi Afonne N. Akani Anthony N. Ikefuna Beckie N. Tagbo Josephat M. Chinawa Ugo N. Chikani	2017	Primary Public Private	SHS, SFS
21.	South East	Evaluation of the School Environment of Public and Private Schools in Enugu to Ensure Child Health Promotion [30]	Bisi-Onyemaechi AI Akani NA Ikefuna AN Tagbo BN Chinawa JM	2018	Primary Public Private	HSE
22	South South	Knowledge, attitude and practice of school health program among head teachers of primary schools in Egor Local Government Area of Edo State, Nigeria [31]	Ofovwe G.E Ofili A.L	2007	Primary Public Private	KAP, SHS, SFS, HSE
23.	South South	Implementing Healthful School Environment as a Component of School Health Program in Selected Secondary Schools in Calabar Municipality, Cross River State, Nigeria [32]	Chabo Joy Awu Ndep Antor	2018	Secondary Public Private	HSE
24	North Central	School Health Services in primary schools in Jos, Nigeria [33]	Bose O. Toma, Tinuade Oyebode, Gabriel I.O. Toma, Emmanuel Agaba	2014	Primary Public Private	SHS SFS
25	North Central	Evaluation of School Health Instruction in Primary Schools in Jos, North- Central Nigeria [34]	Bose O. Toma,Tinuade O.Oyebode, Gabriel I.O. Toma, Mark D. Gyang, Emmanuel I. Agaba	2015	Primary Public Private	SBHE
26	North Central	The survey of head teachers of private schools regarding knowledge and implementation of the school health program in Ilorin [35]	Mohammed Baba Abdulkadir Zainab Ajoke Abdulkadir	2017	Primary Secondary Private	Knowledge SHS HSE

3.1. Knowledge and Perception of the NSHPo and SHP

Of the papers reviewed, only two assessed the knowledge of NSHPo and documented that only 35.5% of teachers had heard of NSHPo and only 5.6% had seen it [25], while the other study documented that many of the school head teachers had never heard of it [5]. Knowledge of SHP was assessed by six studies with only one study documenting good knowledge in more than half (55.9%) [25]. The other five reported inadequate knowledge of SHP among teachers [19,20,23,31,35]. Attitude of teachers towards SHP was assessed by two studies and they both recorded positive attitude in majority 96% [31] and 98% [20]. Perception of role in SHP was assessed by only one study and documented as poor in 55.4% [21].

3.2. School Health Service

School Health Service (SHS) was assessed by thirteen studies. The services include pre-enrolment medical examination for pupils, pre-employment medical examination for teachers, periodic medical inspection, health education, environmental sanitation, nutritional services, de-worming program, provision of first aid materials, collection of data on medical treatments and maintenance of sickness absence records.

Assessment of pre-enrolment medical examination reported by seven studies revealed implementation in a few schools with a range of 0% to 35.6% [15,18,20,28,29,33,35]. Only one study assessed pre-employment medical examination or routine screening for teachers and reported that no school had evidence of such [26]. Assessment of routine inspection revealed implementation in majority of schools with some studies showing implementation in all the participating schools [28,29]. In contrast, periodic medical examination assessed by a few studies revealed implementation in very few schools with a range of 0% to 26.8% [13,16,23,29]. Availability of health personnel vary widely across studies with some reporting no health personnel in majority of the schools [18,22,23,29,33] while some others reported availability of health personnel in majority of schools assessed [16,20,22,28,35].

Assessment of first aid box revealed availability in majority of schools assessed [5,15,16,18,20,22,23,26,28,29,33,35] but with inadequate content in many [18,22,26,28,29,33]. Emergency care and first aid items were provided by less than half (37.6%) of nomadic schools assessed [13]. Assessment of school clinic or sick bay revealed absence in majority of schools [5,15,16,18,22,23,26,29,31,33,35]. Private schools were shown to be better equipped with sick bay compared with public schools [23,26,29,31]. Assessment of ambulance service by two studies revealed no ambulance service in all schools [16,22] while one

study showed availability of ambulance service in 2.8% of public schools and 24.4% of private schools [23]. Availability of medical records revealed a wide range from no evidence of medical record [28,29] to 64.5% [20]. SHS implementation was revealed to be poor overall [5,15,16,23,28].

3.3. Skill Based Health Education

SBHE was assessed by six studies. SBHE lecture content vary widely across schools. Majority of schools teach sexuality, personal hygiene, good health habit education, family living, and food and nutrition [15,18,22,27]. Major communicable and non-communicable diseases, HIV/AIDS, emotional health, drug abuse, safety education including first aid and accident prevention were not in the curriculum of most of the schools assessed [18,22]. Assessment of in-service training with regards to health teaching was poor with a frequency of 3% and 7.6% by two studies [18,33]. Time allotted to SBHE was reported to be inadequate with most schools not meeting the required 3hours per week [18,22,33,35]. Overall implementation of SBHE was reported as poor across most studies [18,22,33]. However, one study reported majority of schools (73% private, 87% public) had scores above the minimum acceptable score for school health instruction [27].

3.4. Healthful School Environment

HSE was assessed by ten studies. Availability of safe and potable water was assessed by all and reported to be poor. Well was the commonest form of water supply reported by five studies with frequency of 46.3%, 57.6%, 62%, 62.5% and 67% [5,14,22,29,35]. Only one study reported availability of sanitary well as 4.1% [22]. Borehole and pipe borne water were reported as second commonest after well by these studies. One study however reported tap water and borehole to be commoner than well [15]. Refuse disposal was reported by eight studies. Open dumping [14,15,22,32,35], burning [5,14,20,35] and private collection [29] were reported as the commonest methods of refuse disposal. Sewage disposal was assessed by nine studies. Water closet [5,11,29,31,35] and pit latrine [5,11,14,15] were reported as the commonest methods. Some studies reported a significant proportion of participating schools had no toilets or make use of nearby bush [15,22,31]. Most studies did not assess other aspects of the physical environment such as adequate buildings/ classrooms, lighting, ventilation and furniture. A study reported nearly half of the participating schools having required qualification [29], while another reported good lighting and ventilation but dilapidated buildings in most of the public schools assessed [14]. A study revealed that majority of schools lack proper drainage system, perimeter fencing and were located close to hazard but were said to have adequate furniture and clear of bushes [26]. Another reported majority of schools were located away from major roads, free from external noise, well ventilated with adequate lighting having classrooms with adequate chairs and tables [32]. Overall implementation of the HSE across the participating schools was reported as poor.

3.5. School Feeding Service

SFS was assessed by nine studies. School meal policy was assessed by only one study and reported present in 92.5% of participating schools [31]. Screening and inspection of food vendors was assessed by seven studies. It was reported by four studies as not done at all [11] or done by minority [26,31,33], while three studies reported inspection to be done by majority of participating schools [5,20,24]. Availability of midday meals was assessed by all the studies and reported to be available in majority of participating schools by seven of the studies albeit not free [5,12,16,18,20,22,24].

3.6. School, Home, Community Relationship

SHCR was assessed by two studies and reported as good for home school relationship but poor for school community relationship [5]. The other study reported it as good in about a third (32.6%) of schools assessed [26]. Government involvement in SHP implementation was reported to be minimal to no involvement with no specific fund provided for its implementation [5].

4. Discussion

This review examined all the components of the SHP as detailed in the NSHPo of Nigeria. Twenty-six published articles were identified and included in the review. Seventeen (65.4%) of the studies were conducted in South West, one of the six geopolitical zones in the country. There were no studies from the North East and North West regions. This therefore poses questions on the SHP in these regions. Bearing in mind that overall SHP implementation in Nigeria is poor, would these Northern regions have fared better or worse? Primary school attendance and academic performance in Northern Nigeria is far below the national average [36]. Many students in this region attend non-formal religious schools where the focus is on learning the Quran and Islamic values with no training in basic reading and math skills [36]. It is therefore imperative to encourage a comprehensive assessment of the SHP in all the regions of Northern Nigeria in order to have a current reliable tool for advocacy. The SHP component assessed by most studies was the SHS while the least assessed was the SHCR. It is noteworthy that SHS is not synonymous with SHP as SHP includes SHS and other four. There is a need to encourage a holistic approach in SHP assessment in order to have a comprehensive instrument for SHP improvement capable of addressing all components.

The impact of SHP is extensive including students' enrolment, retention, learning outcomes as well as health and nutritional benefits of staff, families and communities [37]. Students have been shown to be effective health agents in Kenya [38]. A study conducted in China on the impact of comprehensive SHP implementation revealed positive changes in attitude, knowledge and behaviour of teachers, students and parents [39]. Attitudinal changes include paying more attention to health, knowledge changes noted include increased knowledge about various health issues while behavioural changes include increased

physical activity, improved sanitary habits, reduced or quitting smoking, eating more nutritiously as well as improved parent-child communication [39]. SHP is therefore capable of influencing the health of the community at large if deployed rightly.

Knowledge of teachers about the NSHPo and the SHP was reported to be poor but attitude towards the SHP was however reported as excellent. A great attitude without required knowledge will result in missed opportunity where teachers lack the necessary knowledge to be SHP practitioners. This is reflected albeit by a lone study that their perception of role was poor. In the light of the reported favorable attitude, knowledge of teachers should be optimized in order to harness their strength in implementing the SHP. This report is similar to a study done in Kenya that revealed lack of awareness of the strategic plan among most principals with a resultant effect on the level of implementation [40]. Another study done in Ghana revealed poor knowledge of the SHP among implementers [41]. A study done in Tanzania also revealed lack of clarity regarding the current official guideline on SHS [42]. This is however contrary to a study done in India that revealed majority of teachers having good attitude and perception towards SHP despite not having received adequate training on school health [43]. A study conducted in South Africa also revealed that school managers are aware of their role but unable to fulfill them due to lack of skills [44].

SHS was reported to be poor with very few schools engaging in pre-enrolment and periodic medical examinations, first aid box was reported in most schools albeit inadequate content with no school clinic or sick bay in most schools. A national survey of the SHS in the United States showed provision of two services by almost all school districts: first aid (98.7%) and administration of medication (97.1%) (45). Health screening such as height, weight, vision and hearing was also provided by majority (86.8%) [45]. A study conducted in Ghana revealed availability of first aid boxes in about half of schools assessed [41]. Lack of accessible primary care is costly in terms of health and education outcomes [45]. The findings have serious implications on the physical and mental well-being of the school population as considerable number of hours are spent in the school environment. In situations where there are health challenges, the pupils will be forced to go home since the schools lack minimal aids for early treatment, compounding the problems of school absenteeism and poor educational performance. The opportunity provided by pre enrolment and periodic medical examination for screening services is being missed across the country. Lack of medical records in schools is also a huge gap in SHS. The SHS requires urgent attention as all its components essential for health promotion and maintenance are suboptimal.

SBHE was reported to be poor across all studies with incomplete curriculum and inadequate time allotment. A study conducted in Southern Nigeria on factors affecting health instructions in secondary schools in the state revealed inadequate period for teaching health per week, lack of health education teachers, lack of health education textbooks, pamphlets and posters as well as lack of student's interest in health science [46]. A district level evaluation of school health education in Ghana revealed program focus on building life skills using participatory teaching methods [47]. The coverage of topics varies ranging from 52.3% for consumer health to 98.9% for personal hygiene [47]. SBHE provides the opportunity not just to educate the pupils but also to inculcate skills required for healthy behavior. Such skills are lifelong thereby providing a formidable foundation for health in these individuals. The SBHE components should therefore be optimised to ensure all essential deliverables are provided.

HSE was also reported as poor overall as safe water, ideal refuse and sewage disposal methods were not available in most schools. A study done in three different parts of Southern Turkey revealed sanitised school environment in the apartment school while the shanty town and rural schools had poor sanitary conditions as well as presence of garbage around the school [48]. A similar study done in Northern rural Vietnam reported availability of student latrines in all surveyed schools but children commonly urinated and defecated in the open due to inadequate number of latrines, limited accessibility, lack of constant water supply and lack of latrine maintenance [49]. A similar study conducted in rural India revealed a quarter of schools were situated at inappropriate places, with half having appropriate structure, majority (90%) were overcrowded and majority (90%) had drinking water points [50]. Only half of the schools had adequate latrines with only 10% having adequate handwashing points with soap [50]. A study conducted amongst low-resource primary schools in Western Cape province of South Africa reported school buildings in good condition with all schools having electricity, tap water and flush toilets albeit learner's toilets were not always ideally hygienic [51]. The condition of bathrooms was said to be best in the poor quintile school [51]. A study conducted in Ghana revealed majority of schools (60%) had no source of water, half had access to toilets amongst which 80% was pit latrine [41]. The appalling state of HSE is therefore not an African problem as reported by these studies though rural status is a common factor amongst schools with suboptimal HSE. Components of a HSE include provision of basic amenities such as water and sanitary facilities, it should also protect from biological, physical and chemical threats [52]. The school environment is one of the primary determinants of children's health [52]. Exposure to contaminated water, air pollution and dangerous chemicals can lead to variety of diseases including diarrhoea diseases and asthma attacks [52]. Children are more susceptible to adverse health effects of various hazards due to their physiological make up as well as behavioural patterns [52]. HSE as a component of the SHP must therefore be given utmost priority. This should entail engagement of all stakeholders in addressing all its sub components.

SFS was also reported to be poor as screening of food vendors was not done by majority of schools. Midday meals were said to be available albeit not free in majority of schools. School feeding has been shown to result in increased pupil's enrolment, retention, regularity as well as punctuality in Nigeria and Kenya [53]. It has been reported to enhance pupil's performance in curricular and extracurricular activities in Nigeria [54] and academic

performance in Uganda [55]. SFS addresses nutritional needs of children while at the same time encouraging academic involvement. A meal at school is said to act as a magnet to get children into the classroom [56]. SFS works as a social protection system to support the most vulnerable families and children [56]. The Home Grown School Feeding (HGSF) and Health program was launched in 2005 with the overall goal of reducing hunger and malnutrition amongst school children as well as enhance the achievement of Universal Basic Education [54]. The program has been deployed in Nigeria yet almost 80% of the studies that assessed availability of midday meals reported it not been free. This poses a question to the effectiveness of HGSF program in Nigeria. A report by the world food program revealed lowest coverage of SFP in countries with the greatest need [56]. The reported estimates revealed 49% and 18% of school children receive free meals in middle and low income countries respectively [56]. Sustainability and effectiveness of SFS is said to depend on five quality standards which include: design and implementation; policy and legal frameworks; institutional arrangements; funding and budgeting; as well as community participation [57]. SFS in Nigeria was designed as a social protection measure and the HGSF's goal is to connect SFS with local food production, the design and implementation measure is therefore optimal in states that have effectively deployed HGSF. Nigeria adopted NSHP more than a decade ago with SFS a critical component. The failure of SFS may be as a result of the last three quality standards. The present institutional arrangement with Ministry of Education taking the lead with little or no collaboration with other relevant ministries such as the Ministry of Health and Agriculture may provide a clue to this weakness. Paid school meals reflects difficulty with sustainable funding while the reported poor SHCR identified by these studies may be a pointer to the level of community participation in the SFS.

SHCR was assessed by two studies and reported as good for home school relationship but poor for school community relationship [5] while the other study reported it as good in about a third (32.6%) of schools assessed [26]. A study conducted in Western Cape South Africa reported parental and community involvement to be poor with a similar proportion of a third of schools having parents who were involved in the school health and safety committee [51]. A study conducted in Ghana also reported parental and community involvement in SHP to be poor [41]. Involving the community in SHP was proven in Lesotho to be cost effective as the community was involved in installation of latrines organised through parent-teacher associations, local chiefs and councillors [7]. Subsequent studies should endeavor to assess neglected components of the SHP such as SCHR which was assessed by only two studies.

Despite detailed NSHPo documentation of implementation strategies and funding mechanisms, implementation of SHP in Nigeria remains poor across all the stated components. Factors responsible for poor implementation reported by this study were similar to factors reported by a study conducted in two provinces in South Africa. They identified lack of national policy guidelines for SHS, failure of government prioritization of SHS, lack of intersectoral collaboration as well as lack of community involvement as factors preventing successful implementation of SHS [58]. A review of SHP implementation in South Africa revealed fewer than half of schools in the poorest quintiles received services [59]. A similar study conducted in four states in India reported similar factors: challenges in achieving effective multisectoral collaboration, human resource shortage, training needs and ineffective referral mechanism [60].

5. Conclusion

Implementation of the SHP is still grossly suboptimal in Nigeria. Many teachers lack the essential knowledge of the SHP and their roles in it. There is a need to explore the factors responsible for the poor implementation. How well coordinated is the program between the Ministries of Health and Education? What is the current level of collaboration among the relevant sectors (health, education, environment etc.) as stipulated in the NSHPo document? These are questions demanding further research.

There is a need to re-establish and strengthen the program at the state level and to ensure participation of all stakeholders with defined roles for effective coordination. There is also a need for more research to be done on implementation of SHP especially in areas lacking available data coupled with research into common health problems of school children. Training and retraining of teachers in SHP by the state Ministry of Health and Ministry of Education as well as development of health promoting programs are other ways of strengthening the program.

Acknowledgements

The authors would like to appreciate Drs Olukoya and Atoyebi for their contributions in the initial process.

Conflict of Interest

There is no conflict of interest to report.

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