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TABLE OF CONTENTS

NURSING IN AN AGE OF CHANGE IN NIGERIA

AGBEDIA, CLARA; AIKABELI, PRISCILLA; & MUNGE, MARY

ABSTRACT

The notion of a change is constantly changing society with an array of health and social care needs as voiced by government, professional bodies, the media, and lay people alike. The impact of such changes for nurses and other health and social care workers are not always well articulated. The aim of this paper is to advance thoughts on some key changes that are influencing nursing education and practice in an embracing manner with the hope that nurses will appreciate the influence of these changes on their clinical practice and move with time. In conclusion, the premise is that current health care reforms in the health care industry will hopefully remove some of the existing barriers to nurses practicing to the full extent of their education and expertise.

INTRODUCTION

There is nothing permanent as change. The Greek philosopher, Heraclitus made this observation around 500BC, and the current state of nursing in Nigeria tells us that it is true today. The need for constant change has become a normal state of living, which on one side of the coin can be viewed as a challenge, or, if ill managed, can have disastrous consequences on the individual, the profession, and the organization. It is therefore imperative that the nursing profession responds to the demands of change in a proactive and coherent manner, by recognizing the major trends and key drivers for change, not only from a local position, but also nationally and globally. In doing so, nurses can assert a political voice influencing the direction of policy and cement the foundation for the future of nursing and health care. The aim of this paper is to advance thoughts on some changes that are influencing nursing in an embracing manner with the hope that nurses will appreciate the influence on change on their clinical practice and see the need to move with time.

FORCES SHAPING NURSING PRACTICE IN NIGERIA

1. Problems of the Health Care Industry

According to Schwarz (2024), escalating costs of health, health care reforms, gaps in the health status and life expectancy between men and women and between rural and urban dwellers fragmentation of care, lack of teamwork and quality control, inefficient use of health personnel and the achievement of the health-related Sustainable Millennium Development Goals (SMDGs) are some of the problems of the health care industry. In addition, increased life expectancy has resulted in a need for increased home care, increased emphasis on gerontology and geriatric nursing. Adesola et al. (2024) highlighted that demographic trends and low recruitment during the Structural Adjustment Programme (SAP) in the 1990s in Nigeria have produced a nursing workforce that is skewed towards older workers. Many nurses are retiring, but few are employed (Osigbesan, 2021). The concept of consumerism and the increased sophistication of the client have had their impact too. Television, newspaper, magazines, books and increased personal and vicarious experience with health services have given consumers more knowledge and awareness of service that may be desirable or necessary. Additionally, Croke and Ogbuoji (2024) highlighted that the delivery of health care has also begun the shift from the traditional hospital setting to community-based centres that emphasizes prevention, maintenance of health and management of chronic disease.

2. Advance Technology and Alternative Treatments

Today, more Nigerians are turning away from mainstream medical care and seeking alternative treatments as they take responsibility for their own health. Non-traditional care, such as acupuncture, massage,

therapeutic touch, and herbal remedies, are increasingly becoming a focus of interest.

As stated by Salman (2023), Advance Technology is also challenging traditional nursing values as it brings new ethical dilemmas. Such include the dehumanizing tendency as a lot of attention is paid to patient monitoring devices with less time available for direct patient care. Computerized health information networks (CHINs) allow immediate access to all patient data needed in refining the plan of care. The increased access to patient data will reinforce the need for patient confidentiality. Salmon (2023) also highlighted that the Internet is creating major changes in the way patients/clients view health care and their role as partners in their own care. With the proliferation of websites designed to provide reliable medical and health information to the public, nurses will be called on to educate patients about how to evaluate and appropriately use the information they obtain from these sites. The above changes in information technology dictate the need for professionally prepared nurses who are competent and capable of critical thinking abilities to process complex data and make and intelligent decision concerning planning management and evaluation of health care for the patient/clients. The Chief Executive officer of Apple Computer summed up a major concern of business managers. According to Paul (1993) cited in Agbedia (2019) employers need employees, who can,

- Flexible and respond quickly to changes.
- Identify problem, perceive alternative approaches, and select the best approach.
- Deal with complexity at the workplace.
- Be punctual and dependable and show pride and enthusiasm in performing well.

Underpinning this demand is the fact that what an individual may know is not as important as what he can do with what he/she knows. The emphasis in the labor market including nursing now is on extra functional qualification, which includes abstract theoretical thinking, creativity, and the ability to work with a team. Therefore, dramatic reform and innovation in nursing is needed to bridge the ever-widening gap between theory and practice. This demands innovative ideas, creative thinking to improve equity and access to health care and adding quality to the outcome of nursing care.

3. Nursing practice

A quick review of the literature (Benner, 2010; Agbedia, 2019) clearly demonstrate that the art and science of nursing has evolved from the days when there were no antibiotic or antiviral agents, no disposable equipment, no plastic, and no complex monitoring machines. In addition, there was no conscious awakening or empirical knowledge of the germ theory, with dire consequences to the health and well-being of patients. In the past, nursing, has often been labeled by feminist writers as an adjunct to the (male) medical profession, with nurses looked upon as 'hand maidens', with no rights to engage in clinical decision making, risk assessment, independent prescribing or ethical or moral debates about the patients' care. Furthermore, nurses did not have the rights to a political voice to direct health care. This picture portrays a clearly subservient role for nurses to the medical profession, one that has been difficult to change. Nonetheless, with the emancipation of women, which served to highlight the plight of women workers, and the increased professionalization of nursing, nurses has been empowered to gain equal recognition for its contribution to the health and well-being of individuals and communities. However, the modern nurse is faced with making clinical decisions using evidence of practice and ethical and moral reasoning.

4. Nursing Education

The apprentice system may be said to be a thing of the past in nursing education however, a closer look at the system of nursing education in Nigeria reveals that it continues to prevail. The first ingredient of the apprenticeship system is the dependence of hospitals on the labor of student nurses to supplement that of their nursing staff. Another ingredient is the fact that students are sent to the wards ostensibly to obtain practical experience. Since the experience does not correlate with the theoretical instructions the students are receiving in the classroom, and their instructors do not usually accompany them to supervise and guide such experiences, it can be concluded that they are being used for service. As a matter of fact, in some cases, the

students' rotation through the clinical units is left in the hands of the hospital administration, thus enabling the hospital to place them where their services are most needed.

The scrapping of the apprenticeship system is meeting great resistance because many nurses have great confidence in the system and are convinced that a considerable amount of responsible experience as part of nurses training is essential to the production of the safe and confident qualified practitioner. The sad part of this problem is that the apprenticeship system does not always help the student nurse to learn the right things she needs to learn. It is certainly more effective in teaching students' routine procedure and not necessarily the scientific process of planning and giving care to patients.

THE WAY FORWARD

- **The Nurse Herself**

As stated by Agbedia (2020), the greatest challenge to nursing practice in Nigeria is **the nurse herself**. Consumer satisfaction is becoming increasingly important at all levels of health care delivery system. All patients want high quality care, to be cared for by a nurse that demonstrates concern about patients, and above all, the nurse must have a caring and humane attitude, accessible and approachable, be knowledgeable, skilled, and competent. However, it is sad to say that these qualities are not very visible in our hospital wards these days. This has serious implication for nursing practice.

Most nurses are resistant to change, professional development and advancement. In nursing practice and education, some nurses tend to hold onto previous knowledge and skills without making efforts to improve and maintain new skills (Devgan, 2022). Many nurses are not willing to accept the challenges of staying abreast with education and development of new skills in their areas and levels of nursing practice. A large percentage of nurses are not open to change. For instance, the implementation of the Nursing Process as a scientific and systematic approach to nursing care and the implementation of Evidence Based Practice has been seen by many nurses as problematic. Some nurses have attached a lot of constraints such as shortage of staff and lack of stationery as reasons hindering the implementation of the scientific nursing process (Brunt and Morris, 2022). The nurse must therefore accept responsibilities for individual action and judgment as nursing today is practiced amid other health needs competing for the scarce resources allotted to health (Agbedia, 2019; Agbedia, 2020: Nwachukwu, 2021).

- **Changing the Nomenclature to reflect different levels of preparation and role.**

The public is confused on who nurses are and what it means to be a nurse. Nursing is not clear on what the appropriate education for entry to practice is, and how to recognize and reward individual who have achieved a higher educational level. Nursing is the only health care profession in Nigeria that has dual entry, entry into practice via diploma programs and the baccalaureate degree. This has resulted in problems rather than a gain in that the higher level of education has not been recognized. The distinction between the nurses who have the different level of preparation is virtually nonexistent. Differentiated practice means that nurses prepared in diploma programs, baccalaureate degree, and higher degree programs should have different, well-defined roles and possibly different levels of licensure. The competencies of nurses at each level could be clearly demonstrated, and nurses at each level could be held accountable for practice standards at that level. It is high time nurses globally begin to look at changing the nomenclature in the profession to reflect different levels of preparation and different role expectation. Should we all be registered nurses? perhaps the skill acquisition classification of Benner (2004) the novice, advanced beginner, competent proficient and the expert nurse may be use. The major difference will be the range of experience and level of education. The premise is that the baccalaureate graduate is viewed as possessing a liberal education as well as knowledge and skills in nursing. This background enables the graduate to deliver care to individuals, families, groups, and communities with multiple and complex needs in a range of settings. Practice at the technical level focuses more on the individual client with common, well-defined health problems. In the health care setting, these differences in practice are not readily apparent, as nurses, regardless of

educational preparation, have similar roles and responsibilities.

- **Impact of Nursing Degree on Practice**

A major area that dynamic changes have occurred is in how nursing education has affected practice globally and in Nigeria. Studies (Agbedia, 2020; Agbedia, 2019; WHO, 2010) have shown that higher education improves nursing practice. Swindells, et. al. (2003) examined 21 variables and found degree holders had significantly higher mean score than diplomat on the variable of analysis of issues, critical thinking, evaluation of care approaches, problem solving, identifying gap in information, informed decision making, reflection in and on practice, team building and leadership, confidence to challenge. It therefore means that nurses must strive for university education to provide effective efficient qualitative acceptable, accessible affordable care in a friendly environment, using contemporary skills, evidence-based strategies, and appropriate technology. Innovation of nursing practice must be encouraged. The hall mark of quality education is the ability to contribute to knowledge base and practice of nursing resulting into specialization. Now is the time for nurses in Nigeria to plan towards having/establishing.

- Nurse –led clinics and services.
- Nurse consultant positions
- Clinical nurse practitioner
- Nurse prescribers

Under the Transforming Care at the Bedside initiative, interdisciplinary teams, consisting of a physician, nurse, pharmacist, and case manager, meet with patients within 90 minutes of admission to develop a plan of care. Transforming Care at the Bedside (TCAB) is a national program of the Robert Wood Johnson Foundation (RWJF) and the Institute for Healthcare Improvement (IHI). Its goal is to engage front-line staff and hospital leadership to make improvement in client care. The model eliminates duplication and enhances clinician-patient communication. The emphasis is on the patient. Since its implementation, physician, patient, and employee satisfaction have increased. The average length of stay has decreased by about 10 to 15 percent and cost per case has decreased from 15 to 28 percent (www.ihi.org). Research also conducted at nursing educational programmes in Nigeria (Federal Ministry of Health, 2010; Agbedia, 2020) suggest that there is great progress on issues of higher university education in Nigeria. The benefits of the above roles to nursing include development of a body of nursing knowledge, improved status of nursing and increased leadership opportunities in the community and the application of management skills.

- **Quantification of Registered Nurse Certificate**

Nursing and Midwifery Council of Nigeria and National Association of Nigeria Nurses and Midwives must continue to press the movement of education of nurses and midwives to the Ministry of Health to fit into the 6-3-3-4 educational system. This is necessary to give nursing certificate an academic recognition. The proposed assimilation of schools of nursing by university has been faced with challenges due to the peculiarity of tertiary system of education. The other option which is the creation of Colleges of Nursing in my own view is also fraught with challenges. It therefore means that in a State that has five (5) Schools of Nursing there will be five (5) Colleges of Nursing. This is daunting in view of the financial implication and the fact that the ownership of schools in the State differs. The only way forward is amalgamation of Schools of Nursing to form one College of Nursing.

- **Interdisciplinary Collaborative practice**

Collaboration across disciplines allows professionals to bring their expertise and experiences to influence client care. WHO (2010) defines *collaborative practice* in health care as occurring when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, caregivers, and communities to deliver the highest quality of care across settings. Nurses must therefore collaborate with other health professional in ensuring safety and quality health care. Literature is replete with research that suggested that apart from good

interprofessional coordination and communication, each member of the team bring into play their individual and collective skills and experience to deliver a higher level of services thus improving patient outcomes and quality of care (Institute of Medicine, 2010). IOM in 1999 in their famous report, ***To Err is Human; Building A Safer Health Systems,*** recommended interdisciplinary clinical practice. To date, this kind of care has not been widely implemented outside of discrete settings such as intensive care units, trauma, and transplant teams. Most health care providers today have not been trained to work as part of integrated teams. In Nigeria, currently health care professions are taught in department or schools that function as educational silos that does not encourage contact with other studies nor allow for exchange of ideas and experiences. The premise is that students that are exposed to the rudiments of other health related disciplines are more likely to engage in collaborative projects in the future in their careers. This presents a huge limitation in patient care settings, where nurses must interact with providers from other professions to share information, execute quality and safety checks and help patients understand and comply with treatment plans.

- **Funding of Nursing Education**

Funding of nursing education is one of the foremost issues. Within the context of equity, efforts shall be made to ensure appreciable financial allocation to nursing program. Against this background the adverse effects which inadequate supply of equipment have on nursing students at all levels can only be imagined. Most students only see and read about certain common equipment in textbooks. Even these textbooks are in the reference sections of the libraries! Some are as old as Methuselah. There is also acute shortage of nurse educators. There is a dire need to overcome this challenge. The quantity and quality of staff must be adequate for the number of established departments of nursing. There is usually a teacher/student ratio of 1:10 for effective learning. This must be adhered to in order to produce competent nurses to function in all areas of nursing. Retired but productive staff can be encouraged to serve as adjunct lecturers. The use of retired nurses in the Midwives Service Scheme is a welcome idea; this will go a long way in reducing maternal and infant mortality. Having the appropriate technology infrastructure and up=to=date resources is also critical to successful learning. E-learning should be encouraged to thrive, although there are many things to consider in E-learning as far as the level of development is concerned. Issues like accessibility; affordability and feasibility in the face of epileptic power supply raise concerns.

- **Promoting Research Utilization**

Promoting research utilization through formation of Nursing Research/Committee is a potent way to promote evidence-based nursing. This premise is that the quality of information that nurses need and how effectively they evaluate and use it for clinical judgment will influence patient outcome. Membership of this committee must cut across all cadres of nurses from different specialist for effectiveness.

- **Providing Equity and Access to Health Care**

The need to provide services, opportunities and rights to all persons "without distinction of any kind" is enshrined in the Universal Declaration of Human Rights and The International Council of Nurses (ICN) Code of Ethics for Nurses (2021) which states that:

"*Inherent in nursing is respect for human rights, including cultural rights, the right to life and choice, to dignity and to be treated with respect. Nursing care is respectful of and unrestricted by considerations of age, color, creed, culture, disability or illness, gender, sexual orientation, nationality, politics, race or social status***." (ICN, 2021 p. 1).**

Thus, equity and access are assured when;

The nurse promotes an environment in which the human rights, values, customs and spiritual beliefs of the individual family and community are respected (ICN, 2021).

The nurse shares with society the responsibility for initiating and supporting action to meet the health and social need of the public, in particular those of vulnerable populations (ICN, 2021).

The nurse, acting though the professional

organization participates in creating and maintaining safe, equitable social and economic working conditions in nursing.

- **Active Participation in Politics**

Most of the important issues the nursing profession is facing now and in the next decade cannot be resolved by any one group of nurses. The idea of nurses that politics is distasteful must change. Collective power is the only way that nursing will effectively resolve these issues. Sadly, fewer than 10 percent of all nurses belong to their professional association. As the largest health care profession nursing *can* and *should* have a powerful voice and presence at every table where substantive health care issues are discussed. However, nurses have historically been unwilling to throw their support behind their professional organizations. They have allowed issues of educational background, political philosophies, and other concerns to divide them. Political participation as an individual nurse and a member of an organization is essential as such a time like this. Nothing in the world of health care is without political influence. Thus, it is being suggested that post graduate education in nursing, both at the master's and doctoral levels, should be infused with multiple learning experiences in health reform legislation and health policy, and students be encouraged to be actively involved in political processes that affect health care delivery.

Conclusion

This paper has proved beyond reasonable doubt that change in health care is dynamic in response to political directions, social trends and technological innovations. Old ways of doing things will not work in a hospital environment of cost cutting, technological innovations, and advancements in clinical nursing practice. To implement quality care, nurses must deliver care to patients, family in such a way that the patients can feel the change, love it and believe in the benefits. This is cause for optimism. Things can change and do change.

Recommendations

It is therefore recommended: For nurses to actively participate in Politics to lend the voice that can effect a change in the health care dynamics as nothing in the world of health care is without political influence. Also, nurses must be part of the policy makers and political actors to devise health care reforms. Similarly, post graduate education in nursing, both at the master's and doctoral levels be infused with multiple learning experiences in health reform legislation and health policy.

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KNEE REPLACEMENT SURGERY: THE ROLE OF THE NURSE IN PATIENT SAFETY IN THE OPERATING ROOM, THE NIGERIAN PERSPECTIVE

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ABSTRACT

Avoidable complications occur in the perioperative and postoperative periods of the patient's surgical experience resulting in morbidity and mortality. However, implementation of evidence-based practice is a challenge in perioperative practice where there are complex organisational challenges. The aim of this study was to investigate the role of perioperative nurses in achieving patient safety in total knee replacement surgery in Nigeria. A qualitative study design was utilized in analysing data collected through semi structured interviews. A total of 20 perioperative nurses were selected with at least 1year experience. The inductive data analysis was done using qualitative content analysis. is used to interpret similarities and differences in the latent content in the phenomenon under exploration. Three major themes (Organizational, Team and Individual levels) and five sub themes (Reliable Procedural Plan, Functional Reporting and Documentation Practices, Collaboration, Being Respected by other Team Members, Having Shared Goals and Common Expectations and Professional Knowledge, Skills and Experience) were adjudged important for patient safety practice. Major finding in this study is that deviation from established practice standards were observed, requiring constant performance appraisal and relying on individual corrective measures for good results. The study therefore concluded that there was inconsistency in practice of patient safety during knee replacement surgery. It was recommended that the inconsistency in practice be addressed for patient safety during surgery. Surgeons and perioperative nurses could work out a system where too many cases are not booked for operation on a day for knee replacement surgery. This will give room for proper utilization of the Surgical Safety Checklist which is the gold standard for patient safety in the operating room.

Keywords: Knee replacement; perioperative; perioperative nurses; infection; patient safety.

INTRODUCTION

Avoidable complications occur in the perioperative and postoperative periods of the patient's surgical experience resulting in morbidity and mortality. There are guidelines and treatment recommendations for preventing these complications. However, implementation of evidence-based practice is a challenge in perioperative practice where there are complex organizational challenges. Therefore, good, professional knowledge and skills are required to minimize and manage threats to patient safety. The World Health Organization (WHO, 2009) Surgical Safety Checklist (SSC) is an example of such evidence-based guidelines developed to integrate individual, team and organizational planning and control in minimizing the danger of preventable complications and enhance patient safety.

Knee replacement is a delicate operation, and complications can be life threatening for the patient. According to Nyberg et al. (2021) steps are optimized in operative management to reduce the burden of Surgical Site Infection (SSI) or Periprosthetic Joint Infection (PJI) in current arthroplasty operations as these would be devastating for patients where they occur. Operating room nurses are continually working to prevent harm with the aim of achieving infection free perioperative and postoperative surgical experience for the patient. However, these events still occur frequently due to alterations in best practice, although it is unclear to what extent these will increase the risk for complications. Perioperative nurses work to minimize risks by taking practical steps where commonly accepted or established good practice is difficult to follow. According to Maya (2022), perioperative nursing dates to 1873 when schools of care were created in the United

States of America as a field of specialization. Although this field of specialisation was acknowledged before 1889, however, the first mention of nurses in a surgical setting was found in the text notes on Nursing by Florence Nightingale which stated that "the surgical nurse must always be alert, on guard against the lack of cleanliness, musty air, lack of light…". Additionally, the Association of Operating Room Nurses (AORN, 2023) defined perioperative nursing as the process of care during the perioperative period temporarily experienced by patients during the three phases of the surgical experience. AORN Guidelines for Perioperative Practice are the gold standard in evidence-based recommendations to deliver safe perioperative patient care and achieve workplace safety.

Howard-Hill (2018) revealed that the occurrence of periprosthetic joint infection and the impact on patients and the healthcare system is significant due to the resultant patient morbidity and mortality, highlighting the role of the perioperative nurse in the management of patients with periprosthetic joint infection. The demand for total joint arthroplasty is increasing worldwide, with the USA projecting an increase of 673 percent in the demand for total knee arthroplasty in that country by the year 2030. Additionally, Katchy, et. al. highlighted that the demand for total need replacement in Nigeria is growing by the day due the increasing number of end stage osteoarthritis patients in the country. According to the World Health Organization (WHO, 2016), Surgical site infections are a great concern as the second most common healthcare associated infection and the most common cause of failure in total knee arthroplasty. Mortality rate for revision arthroplasty for infection is five times greater after five years with an estimated cost four times higher for an infected revision procedure than a primary arthroplasty (Howard-Hill, 2018). Inadequate diagnosis and treatment of infection in its early stages will lead to further interventions that increase the overall cost, resulting in an inferior functional outcome for the patient. In China, Sun, et. al. (2021) also highlighted that effective nursing methods contribute to the improvement of the recovery of knee joint function and postoperative quality of life for patients undergoing artificial knee replacement during the peri- operative period. Additionally, studies in Nigeria (Olowo-Okere, 2019; Dayo-Dada, et. al., 2022) also suggested that surgical site infection (SSI) is a major patient safety concern in hospitals. Against this backdrop, the researcher decided to investigate the role of perioperative nurses in achieving patient safety in total knee replacement surgery in Nigeria.

This study aimed to explore current role of perioperative nurses focused on their routine workplace activities regarding patient safety factors that they can influence. The specific aims of the study were to analyse and determine the role of perioperative nurses in patient safety and prevention of perioperative mishaps and the risk of SSI for a knee replacement operation in Nigeria where individual, team and organizational factors are vital. Therefore, this study explored the clinical application of perioperative nursing care for patients with artificial knee replacement in Nigeria, with the goal of providing a theoretical basis for clinical nursing care.

METHOD

Design: A qualitative study design was utilized in analysing data collected through semi structured interviews with reporting compliance with Consolidated Criteria for Reporting Qualitative Research as suggested by LoBiondo-Wood and Haber (2018).

Setting: The interviews were conducted in three hospitals, one university hospital, one public general hospital and one private orthopaedic hospital in Southern part of Nigeria. There are international differences concerning areas of responsibility in the operating room. In Nigeria, perioperative nurses are responsible for preparing instruments and implants for the operation, patient positioning, and operating room asepsis. The perioperative nursing training in Nigeria starts as a registered nurse and a 1-year post basic specialist programme in perioperative nursing certification.

Participants: The study included certified and practicing perioperative nurses who met the following inclusion criteria: at least 1 year of experience in knee replacement surgery.

Sampling Technique: A purposive sampling technique was employed and perioperative

nurses who met the inclusion criteria were identified by nurse leaders in the various hospitals. Twenty perioperative nurses were interviewed with a median age 40 years (range 27–59), 4 males and 16 females. Median experience as perioperative nurses were 7 years (range 2–40).

Data collection: The semi structured interview guide consisted of three questions: 'In perioperative care, what does patient safety during knee replacement surgery include for you?', 'In securing patient safety, what do you see as most essential?' and 'Do you see any areas of weakness in patient safety?'. Probing questions were asked where necessary. All interviews were conducted by the author. Seventeen interviews were done in person, and 3 by telephone. The interviews were recorded digitally and transcribed verbatim.

Data analysis: The inductive data analysis was done using qualitative content analysis is used to describe similarities and differences in the manifest content and to interpret the latent content in the phenomenon under exploration (Nyberg, et. al., 2021). A manifest analysis was performed. The transcripts were imported into SPSS Software version 22. Firstly, the recorded interviews were reviewed, and transcripts read to make sense of the phenomenon. Secondly, the text was divided into units relevant to the aim of the study. Thirdly, the units were carefully condensed to avoid losing content, and each meaning unit was coded. The codes were abridged into groups and subgroups.

RESULTS

From the analysis, three main groups and seven subgroups emerged as shown:

1. Organizational level
   - Reliable procedural plan
   - Effective reporting and documentation
2. Team level
   - Interprofessional and interdisciplinary collaboration
   - Protocol, checklist and standards implementation
   - Compliance with Aseptic Techniques
3. Individual level
   - Professional knowledge, skills and experience
   - Personal commitment

Organisational level

The organisational level conditions of significance that were featured comprised of a reliable plan for the procedure, reporting and documentation practices to enable effective exchange of information.

Reliable procedural plan

Perioperative nurses expressed the need for a effective preoperative plan to ensure a safe procedure. The time for a surgical procedure could be reduced by proper planning and preparation. They stated that they often needed to confirm the information for surgical planning with the orthopaedic surgeon before preparing for the procedure to avoid occurrence of failure in updating the plan which was perceived as unsatisfactory and time-consuming. However, the participants adapted to the incomplete plan instead of addressing the problem.

You require extra work when something is not right. When you suspect something wrong, extra time is wasted in calling and talking to the surgeons who are going to. (Participant16)

Getting instruments and implants available for a planned procedure was perceived as challenge when procedural planning not updated and special instruments or implants for the procedure are not available. Then the operating room nurse need to prepare for another surgical procedure instead. This was perceived a hindrance in operating room workflow and made it challenging to accomplish the list of operations scheduled for the day. The main source of patient-related information for some participants was the operation list and the anaesthetic preoperative assessment. They had no time to get information from orthopaedic ward nurses routinely on patients at risk for pressure ulcers and poor nutritional status, thereby reducing the chance of preparing for a safe surgery.

Effective reporting and documentation

Challenges of reporting and documentation practices threatening continuity of patient care were highlighted. Some participants complained of documenting perioperative care both in the computer and on paper which was viewed as both time-consuming and a risk for patient safety. The documentation on paper was considered important as perioperative nurses rarely reported in person to colleagues on the postoperative ward. The nurses on the postoperative and orthopaedic wards were working in the main health record system, not in the planning system where perioperative nurses documented their care, and thereby could not consult the information the perioperative nurses had documented. The participants suggested that the planning system should be seen merely as a planning system and not as a tool for documentation.

Documentation is a problem as we are not used to each other's recording system so the nurses on the postoperative wards seldom read. So, if we had written: Check course on our records system, they don't care about it because they think it is hard to get into it because it is not a system they usually work with. So, you have to either say it or write it on paper, making it a double documentation, which is unnecessary time wasting when we have little time for patient care. (Participant 7)

Reporting to a colleague and keeping the surgery on course at the same time was perceived as a risk. Perioperative nurses tried to avoid changing personnel during surgery. However, it is sometimes inevitable, especially during revision knee replacement surgery that can last a whole day. It was considered a challenge to remember to report everything and some recalled the need to call the operating room on their way home to fill in missing information in their report.

The participants in this study did not believe that reporting incidents resulted in actual improvement in patient safety. Operating room management sent information about new routines and incidents that were sometimes perceived not to reach the appropriate operating room personnel. The perioperative nurses shared a desire to get feedback on the treatment results of patients. They wanted to know if there had been injuries for patient who had intraoperative challenges. If the orthopaedic surgeons were asked for the results for one specific patient, they shared the result with the perioperative nurses. However, there was no systematic feedback on results or complications. Some participants stressed the desire to know the infection rates of their specific department.

Team level

Team collaboration established safety protocols and compliance with aseptic techniques were stated as vital aspects of safety practice. Compliance with aseptic techniques varied among different professionals within the team.

Interprofessional and interdisciplinary collaboration

All participants stressed the significance of teamwork and collaboration in patient safety. The professional expertise of team members was a vital contribution in the shared goal to do the best for each patient. The perioperative nurses expect all team members to perform responsibly, and it caused a strain in the workplace if anyone behaved otherwise. The perioperative nurses felt that their professional knowledge was respected in this team collaboration. Steady communication with other operating room personnel was seen as vital.

We need a lot of teamwork because without my anaesthetist, anaesthetic nurse, scrub nurse, assistant surgeon and without me there will be no surgery and without the patient there will be no surgery either. So, there are many people and it gives a sense of security in fact that everyone tries to think of how best to void injuries not to cause harm. (Participant 1)

The perioperative nurses constantly need to develop their skills and improve their work steadily. Perioperative nurses being alone in their profession in the operating room limits opportunities to ask colleagues for advice and support. In situations where two perioperative nurses collaborate during surgery, they have opportunity to support and learn from each other, thereby improving their work.

Protocol, checklist and standards implementation

All participants expressed that they were accountable for the safety guidelines, ensuring instruments and other sterile materials and equipment needed were available and functioning. They also asserted their responsibility for surgical count, with the first count done before the surgery began as a base line. Another count was performed during the procedure before closing the wound to ensure that no surgical items were accidentally left in the wound. Another vital role of perioperative nurses was the verification of the patient's identity when entering the operating room and the verification of the operating site on the patient with the x-rays. the participants confirmed the preparation with the orthopaedic surgeon using the timeout in the WHO Surgical Safety Checklist. However, they highlighted that the Surgical Safety Checklist was not always implemented as designed as the checklist was often performed while the perioperative nurses were busy with final preparations for the surgery and not participating with full attention. The utilisation of timeout was dependent on the preference of the orthopaedic surgeon which differed from one surgeon to another.

... I know that I have the right patient to begin with, that planning is consistent with the x-rays or when we do 'Sign in', it is consistent with the patient records, the identity bracelet, operation site and the operation is performed on the right site (Participant 11)

The participants agreed that safety protocols were important in ensuring the right implant was available, a step usually taken by the orthopaedic surgeon and the perioperative scrub nurse, reading the implant package before it is opened unto the sterile field. Participants viewed standard procedures as a safety measure. They explained that they constantly assessed what was best for each patient, judging with existing routines and standards.

Compliance with Aseptic Techniques

The participants stated their responsibility for sterility and infection control as they guarded the sterile field during the entire surgical procedure by watching the activities of other team members which sometimes could be challenging. Participants also noted that the prerequisites for work in an aseptic environment were present, national guidelines for preventing Prosthetic Joint Infections were established and complied with. One of such guidelines was the control of traffic to reduce the number of persons in the operating room and avoid disruption of the ventilation by opening the doors too frequently. However, some participants observed that compliance with guidelines varied within the team as some orthopaedic surgeons followed the guidelines more strictly than others and controlling the number of personnel in the operating room was disregarded by some surgeons whenever there was an interesting surgical procedure.

The participants also emphasised the need to improve staff behaviour adhering to the aseptic techniques as insistence was viewed as a disturbance of work flow, delaying both the surgical procedure and the operation schedule for the whole day. These procedures could be handling of specimens and urinary catheters. Some participants perceived that they were seen as annoying and disturbing when they notified others of break in aseptic techniques.

It is uncomfortable when someone is reprimanded or called a hygiene-witch/wizard... Even if people think you're irritating, I think you still get some kind of respect as you would be seen as competent and what you say is important. Even if you are considered awkward, you are trusted as competent professional working for the common good the group and the patient.

(Participant 10)

Individual level

The perioperative nurses had a feeling of personal responsibility towards the patients and felt guilty if they failed protecting them from harm by using their professional knowledge and skills with the confidence to speak up if the patient was at risk. This is known as the surgical conscience.

Professional knowledge, skills and experience

Perioperative nurses knew what was expected of them to preserve patient safety as they used professional knowledge and skills to protect patients from harm which included safe positioning of the patient on the operating table before surgery. They had a responsibility for what they saw during the procedure by being a part of the operating team and to speak up if a situation occurred that put the patient at risk. They experienced that notifying the orthopaedic surgeon of near mishaps when unexpected things happen during surgery required confidence which was gained by experience and the team needed to adjust their plan.

If you see something in the surgical field, I feel that you have a responsibility, then it depends on experience, how much experience you have and what you know or have seen before. It is also a part of patient safety that you scrubbed for the operation. (Participant 17)

Personal commitment

Perioperative nurses are responsible for the patient's safety and comfort in perioperative care. They were eager to welcome the patient before surgery began and reassured patients that staff in the operating room was working in their best interest in a dignified manner.

The participants felt guilty if there was occurrence where they failed to protect the patient from harm. Some described occurrences where they would not have wanted to be the patient. Although perioperative nurses recognise that many factors can lead to infection, however, they felt accountable if a patient acquired Surgical Site Infection or Periprosthetic Joint Infection.

As perioperative nurses, there must be something in us. As soon as there is an infection, you go straight into the old medical records to check if you were there during the first surgery as you think you bear the responsibility. Then I understand that there are many factors that come into play…… I think many of us feel responsible…. have I done something wrong? .... is it my mistake that caused this patient's infection? (Participant 8)

Discussion

The findings of this study show that perioperative nurses recognise diverse ways of improving safety measures in the operating room at different levels during knee replacement surgery (organisational, team and individual). These events disrupt the workflow, sometimes threatening patient safety. Additionally, the findings highlight how impending problems were solved from day to day to maintain safety. To ensure a safe surgical procedure, the perioperative nurses recognised the need for a dependable preoperative plan confirming previous findings (Nyberg A, et al., 2021). This is in line with Iflaifel, et.al. (2020) study which revealed that predictive information is needed in resilience engineering to anticipate decision making. Some participants identified problems when confirming the plan between the computerised planning system and the surgeon which they perceived as time-consuming and unsafe. As stated by Sandelin., Kalman., and Åkesdotter. (2019), the aim of computerised planning system is to assemble a workable plan.

However, Rothstein and Raval, (2018) recognised that achieving this requires the engagement of all stakeholders involved in the planning. The risk of disruptions could arise if the plan is not updated, compromising patient safety and affecting organisational productivity. Previous studies (Guerriero and Guido, 2011; Braaf, Riley and Manias, 2015) presented similar findings. Rather than addressing the main problem of inadequate plan update, participants chose to address the immediate problem in order to maintain the workflow in operating room. Smith, Plunkett and People. (2019) saw this as resilience by the frontline workers when the perioperative nurses had to adapt in order to achieve good surgical outcome even with unsatisfactory working conditions. Although the perioperative nurses had good intentions adapting to the situations, Nyberg A, et al., (2021) reasoned that this could create a disconnect between the operating room management work-as-imagined and the perioperative nurses work-as-done. This type of disconnect could restrict the possibility of change which is inevitable. Work-as-imagined means following safety guidelines and

standards. However, Smith, Plunkett and People. (2019) maintained that operating room staff know that undeniable variations are inevitable in safe practice.

In this study, the underlying challenge in poor engagement in planning documentation could linger on if the operating room managers fail to acknowledge or do not have the freedom to address it. The problem of inadequate plan update was perceived by perioperative nurses as annoying, repetitive and frustrating on the long run. Among the front-line staff disillusionment and turnover could impact negatively on the resilience in the system (Rothstein and Raval, 2018)

During the interviews, different computer systems were observed hindering the flow of information, potentially affecting patient care, confirming previous findings regarding documentation (Braaf, Manias & Riley, 2011). The perioperative nurses had no time to access information from the main health record. Therefore, they felt that a technology with quick access to relevant information could be provided by the organisations (Braaf, Riley & Manias, 2015). In order to save time, perioperative nurses in this study did not report directly or in person to postoperative wards to prevent breaks in continuity of care. Some revealed that they developed a way to bypass the documentation practice. This bypass resulted in duplicate documentation in separate systems to ensure the postoperative ward nurses got necessary information. Participants adapted their routine practice to demonstrate resilience to avoid misinformation. Rothstein and Raval (2018) viewed this development of bypass as taking risk that can limit the possibility of change.

It was noted that teamwork and collaboration are essential in averting unfavourable occurrences, which supports findings from previous studies (Howard-Hill, 2018; Rothstein and Raval, 2018). As previously reported by Cumin, Skilton and Weller, (2017), expertise of every profession was viewed as a vital contribution to the process and every team member needed the confidence to speak up when the alert is needed. The perioperative nurses felt they were respected for their professional knowledge in collaboration with other team members. However, previous studies suggested the need for improvement in collaboration between doctors and nurses in the operating room and other areas in the hospital. Their competence, technical skills and experience in patient care informed their patient safety practices which were identified as important as presented earlier by Rothstein and Raval (2018) and Sandelin et. al. (2019). A sense of personal engagement among the perioperative nurses was prominent and feelings of guilt were perceived where a patient was not protected from harm. Additionally, they expected all team members to accept their professional responsibilities and stressed the need for a common purpose. An open dialogue within the team, with established expectations were adjudged important, confirming the report of previous by Gillespie, et. al. (2013). The perioperative nurses identified primary responsibility in assuring compliance with aseptic techniques diverse level of compliance within the team as reported by van Dijk et. al. (2023). Although guidelines for preventing infections were established, experience showed that level of compliance varied among team members. Good leadership and mutual respect, acceptance of workgroup hierarchy with share goals were needed within the team for best effect Gillespie (2016). Some variations in day to day performance is expected, this should not be understood as dangerous since things should still go well, though a team not complying with existing safety protocols is beyond expected performance variability (Hollnagel, Wears and Braithwaite, 2015). Patient safety cannot be improved by introducing safety policies alone without the need for implementation (Megeus, et. al., 2015).

As earlier stated by Göras, et. al. (2020), Checklist was identified as crucial for preserving safety during surgery. Control steps were seen as guidance for safe practice, and specifically SSC as a useful tool to maintain a high level of safety awareness. Findings from other studies, (Nordström and Wihlborg 2019; Göras, et. al. 2020) noted the surgical safety checklist increased communication and teamwork in the operating room and highlighted potential risks. In this study, it was noted that the Checklist was not always used as

designed and its implementation was complicated by the perception of the SSC as nonessential. Reports from previous studies (Nordström and Wihlborg 2019; Göras, et. al. 2020) suggest that the implementation of SSC might be more successful if led by surgeons. Standardisation of procedures was considered a way to improve the perioperative process. Appropriate standardisation and a level of flexibility are needed for the success of an organisation as standardisation protects against predictable and preventable errors and flexibility supports resilience in unpredictable situations, where balance between these is needed (Kolodzey, et. al., 2020). This is in line with the findings of another study by Göras, et. al. (2020) which suggested that to manage the complexity in operating room and maintain safe care necessitates the ability to respond to both the expected and the unexpected. The findings from this study show that resilience exists within the organisations which is not only used in unpredictable situations. The perioperative nurses demonstrated resilience in managing day to day work, showing their ability to make and maintain adjustments. However, where there is every day need for resilience, capacity to respond to new challenges may be restricted (Hollnagel, Wears and Braithwaite, 2015). Resilience is needed to resolve unplanned situations rather than everyday occurrences. Safety threats in everyday work should be recognised and managed as the organisation improves.

Strengths and limitations

During the analysis, there were interactive discussions among the research group which increased credibility for this study. Direct quotes with descriptions were also presented for credibility. The diversity of professionals involved in the analysis also strengthened this study. The degree of transferability is up to the reader. One limitation is that all interviews were conducted by the first author, who is a perioperative nurse professionally known to some of the participants. This dual role of the researcher could potentially influence participant response. However, this dual role may have helped create a safe environment and the shared understanding could have deepened the report.

Conclusion

The conditions for supporting patient safety and minimising the risk for complications during knee replacement surgery continues to be inconsistent, requiring constant performance appraisal. Perioperative nurses make adjustments to solve problems as they arise where there are obvious risks for patient complications. The organisational patient safety management process still seems to allow deviation from established practice standards, relying on individual corrective measures for good results in the current Nigerian situation.

Recommendations

It was therefore recommended that the inconsistency in practice be addressed for patient safety during surgery. Surgeons and perioperative nurses could work out a system where too many cases are not booked for operation on a day for knee replacement surgery this will give room for proper utilisation of the Surgical Safety Checklist which is the gold standard for patient safety in the operating room without seeing it as time wasting. This will go a long way in minimising complications and eventual postoperative infections that may arise. Additionally, it will reduce cost of hospital stay in the present harsh economic situation in Nigeria, for best patient outcomes.

Ethical approval

Ethical approval for this study was obtained from Edo State Health Research Ethics Committee. The perioperative nurses gave their written informed consent to participate before the interviews. Participation was voluntary and they were told that they could withdraw from the study at any time.

Conflict of Interest

The authors declare no conflict of interests.

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CHOICE OF PLACES OF DELIVERY AMONG WOMEN ATTENDING ANTE NATAL CLINIC AT NGWO HEALTH CENTRE

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ABSTRACT

It is a common knowledge that pregnant women that attend Ante Natal Clinic (ANC) in the Local Government Health Centers in Enugu State, Nigeria usually chose to deliver their babies outside the Health Centers. The study determined the choice of Health Facilities for child delivery among women attending Ante Natal Clinic (ANC) at Ngwo Health Centre and the factors influencing their choice. The study was guided by the Theory of Reasoned Action (TRA) The target population was all the women attending ANC in the Health Centre. Data was collected from 200 women which was the average monthly attendance in the health facility. A cross-sectional research design was used for the study. The data was collected between June and July 2021 with the assistance of two Research Assistants who visited the centre on clinic days which was twice a week. Data were presented in frequencies distribution tables while Chi-Square test (X^2) was used to test hypothesis. *The study showed that majority(90.5%) of respondents preferred government health facility but up to 22.5% still prefer to delver their babies at home. This may be small but this practice still pose a great danger to mothers and their babies in the community. There is high literacy level among Women in Enugu-Ngwo community. The study concluded that women in Enugu-Ngwo community are highly educated, use multiple places for child delivery. The major factors that determined their choice were* professional competence, cost and attitude of the health health works*; It is recommended that different health education strategies like; campaigns, workshops and other strategies should be used to educate the women in the community on the dangers of home delivery.*

Keywords: Key Words: Choice of Delivery, Antenatal, Women Clinic

INTRODUCTION

Pregnant women usually visit Health Facilities for the monitoring of the progress of their pregnancy. It is expected that the Health Facility that monitored the progress of pregnancy will be in the best position to deliver the baby expect if referral to a higher facility is required. It is the right of the patient including the pregnant woman to make the choice of the health facility and personnel to receive care from . This becomes a critical decision to be made by pregnant women during delivery. This is because place of delivery of a child is very important for the survival of the baby and the mother. According to Ahmed *et. al.,* (2010) the power regarding the use of maternal healthcare services is strongly influenced by the values and opinions of husbands, mothers-in-law, close relatives, traditional birth attendants, and other community members.

This study was guided by the Theory of Reasoned Action (TRA) which was propounded by Martin Fishbein and Icek Ajzen in 1967. The theory assumes that the two main factors that influence a person's intention to perform a certain behavior are attitudes and subjective norms. According to the theory, a person holds a belief that a particular behavior leads to a particular outcome and evaluates the outcome before taking action (Ajzen & Fishbein, 1991). The theory identified intention as the most immediate determinant of behaviour and can successful predict health related problems like the choice of place of delivering baby.

Johnson *et al.,* (2020) examined choices and determinants of delivery location among mothers attending a primary health facility in

South- South, Nigeria. The study was a descriptive cross-sectional study among mothers attending PHC in West Itam, Itu, Nigeria. A sample 185 mothers participated in the study. Data were collected using questionnaire and analyzed with STATA version 12.0 and level of significance was 0.05. the study revealed that the place of delivery of last pregnancy were health facility, traditional birth attendant's place, respondent's residence and church. The study concluded that different non-institutionalised delivery locations such as TBA among others, were utilized by some of the respondents and that these could be attributable to distance, cost and attitude of health workers.

Ibrahim *et al.,* (2021) also examined the preferences of place of delivery among women receiving antenatal care at a secondary health facility in Zaria, Kaduna State Nigeria. The study made use of descriptive research design. The sampled participants in the study were 395 women receiving antenatal care at Hajiya Gambo Sawaba General Hospital, Zaria were selected using systematic sampling technique. A pre-tested structured questionnaire was used to collect data from the respondents. The study revealed that majority of the respondents were *primigravidae* and hospital was the most preferred place of delivery for both the primigravidae and *parous* women, Midwives/nurses, medical doctors, TBAs. It was also found that some based their decision, on whom they prefer as their birth attendants on the perception that the personnel knows the job. The study recommended that a National Family welfare programme should be designed to improve the uptake of facility delivery and skilled birth attendance with strong presence of both public and private sectors to help combat the high maternal mortality in Nigeria.

Dahiru and Oche (2015) examined antenatal care, institutional delivery and postnatal care services utilization in Nigeria. The aim of the study was to determine factors associated with utilization of these health MCH indicators by employing both bivariate and multivariate logistic regressions. The study found that some of the respondents delivered in health facility. The study further revealed that antenatal care strongly predicts both health facility and postnatal care utilization while health facility delivery equally predicting postnatal care. The study concluded that improving utilization of these MCH indicators will require targeting women in the rural areas and those with low level of education as well as creating demand for health facility delivery. Improving ANC use by making it available and accessible will have a multiplier effect of improving facility delivery which will lead to improved postnatal care utilization.

Taking decision on the choice of place of delivery is one of the problems confronting pregnant women in Enugu Ngwo community of Enugu North Local Government Area of Enugu State. The effect of this problem is that in Enugu Ngwo maternal and child morbidity is on the rise. In most cases pregnant women deliver their child en-route to their place of delivery. There are incidences of pregnant mothers patronizing Traditional Birth Attendants who lack the basic knowledge of Obstetrics and Gynecology and who use crude practices during delivery which has health implications to mothers and child. There is often neglect of the use of Public Health Centers in the community where staff were well trained in handling pregnancy related matters and this help to determine to objective of this study which is the identification of the choice of the preferred places of baby delivery by women attending ANC at Enugu Ngwo Health Centre, Enugu State Nigeria .

OBJECTIVES

1. To identify the choices of Health Facilities for child delivery among women attending Ante Natal Clinic (ANC) at Ngwo Health Centre.
2. To determine the factors influencing the choice of Health Facilities for child delivery among women attending Ante Natal Clinic (ANC) at Ngwo Health Centre.

RESEARCH QUESTIONS

1. What are the choices of Health Facilities for child delivery among women attending Ante Natal Clinic (ANC) at Ngwo Health Centre.
2. What are the factors influencing the choices of Health Facilities for child delivery among women attending Ante Natal Clinic (ANC) at Ngwo Health Centre

METHOD

A cross-sectional study design was used to conduct the study at Enugu Ngwo Health Centre.

:The Health Centre is a Local Government Health Centre at Enugu Ngwo. at Enugu Ngwo is a community with a population of 21,633 people (2006 Census).The people of Enugu-Ngwo live on a Hill-Top plain towards the Milliken Hills on the west.

The total population for the study was 200 pregnant women which was the average monthly attendance at the clinic Convenient sampling technique was used for data collection. The Health Centre was visited every clinic days until data was collected from 200 women which was equal to the average monthly attendance in the ANC clinic. The instrument for data collection was 22 items questionnaire that was specifically designed for the study and asked questions on socio-demographic characteristics, preferred places for delivery and factors influencing choice of delivery. The instrument was validated by a professor and a statistician who agreed that the instrument was in tone with the objectives. The instrument was pretested at Agbani Health Centre which is another Local Government Health Centre in the same state. The reliability co-efficient of the instrument was 0.78.The data was collected in June 2021 after obtaining ethical clearance from the management of the Health Centre. Two Research Assistants (RA) assisted with the data collection. They visited the centre on clinic days, which was holding twice every week, for one month. Data were presented in tables. Inferential statistical tool was used to analyze the data collected.

RESULT

Socio-characteristic distribution of the respondents

Table 1: Distribution of Respondents by Demographic characteristics.

N = 200

Age	Frequency	Percentage (%)
21 – 25	34	17
26 – 30	105	52.5
31 – 35	33	16.5
36 – 40	28	14
Marital Status		
Married	178	89
Single	22	11
Occupation		
Applicant	44	22
Business woman	70	28
Teacher	17	8.5
Civil servant	53	26.5
Student	2	1
Artisan	14	7
Educational Status		
Primary education	62	46
Secondary education	92	31
Tertiary education	46	23

Table 1 shows that 34 (17%) of the respondents aged between 21 and 25 years, 105(52.2%) aged 26 to 30 years while 33 (16.5%) aged between 31 and 35 years and 28 (14%) aged between 36 and 40 years. Married mothers were 178(89%) while 22(11%) were single. Distribution of respondents by occupation showed that 22 (22.6%) were applicants, 70 (28%) were business women, 17 (8.5 were teachers, 53(26.5%) were civil servants, 2(1%) were students while 15(7.5%) were artisans. The educational qualification of the respondents showed that 62 (31%) had primary education, 92(46%) had secondary education while 46(23%) had tertiary education

Table 2: Distribution of respondents by preferred places of delivery

N=200

S/N	Variables	Frequency	Percentage
1	Traditional Birth Attendants (TBA)	77	38.5
2	Enugu North Health Centre	167	83.5
3	Private Hospital	107	55.5
4	General hospital	151	75.5
5	Prayer House	0	0
6	Delivery my first child in a government hospital	181	90.5
7	At my house	45	22.5
8	My choice is where I attended ANC statics	148	74
9	Any other, Please specify		
(a).	In a healing home	99	49.5
(b).	In my mothers house	32	16

Table 2 showed that the respondents were distributed by their preferred places of delivery as follow; 77(38.5%) preferred Traditional Birth Attendants (TBA), 167(83.5 %) preferred Enugu North Health Centre, 107(53.5%) private hospital while 151 (75.5%) preferred general hospital and none (0%) preferred prayer house, 181(90.5%) preferred to deliver first child in a government hospital, 45(22.5%) preferred their houses, 148(74%) preferred to deliver where they attended ante natal clinic, 99(49.5%) preferred healing home, 32(16%) said that they prefer mothers house.

Factors determining the choice of place of delivery.

Table 3: Distribution of Respondents by factors determining choice of place of delivery

N = 200

S/N	Variables	Frequency	Percentage
10	Cost of medical services offered in the health facility	192	96
11	Distance to the health facility	150	75
12	Attitude of the health work	188	94
13	When the Doctor will be available	133	66.5
14	My mother /grandmother will decide place of delivery	16	8
15	My husband will decide	118	59
18	Professional competence of the health care providers	196	98
17	Time of labour	167	83.5
18	Others		
a.	My income level	45	22.5
b.	Presence of female Doctor in facility	119	59.5

Table 3 showed that respondents responses on factors that determine the choice of place of delivery by the women attending ANC at the health centre showed that 192(96%) said that it is cost of medical services offered in the health facility, 150(75%) identified distance to the health facility as a factor that determines choice of place of delivery, 188(94%) said that it is attitude of the health workers, 133(66.5) said that it when the doctor will be available, 16(8%) said that their mother /grandmother will decide place of delivery, 118(59%) said their husband decide their choice of place of delivery, 196(98%) said that it is professional competence of the health care providers, those who said that it is time of labour were 167(83.5%). those whose income level determine their choice of place of delivery are 48(16%) while those who preferred presence of female doctor in facility are 119 representing 59.5%.

Ho[1] There is no significant association between age and between age and choice of delivery among women attending ANC at Enugu places of `delivery is the hospital.

In hypothesis the **c**ritical value of (X^2) at 0.05 level of significance is 3.84, The calculated Chi-Square (X^2) value which is 1.8 is less than the table value, the Null hypothesis (Ho) is accepted . Our null hypothesis which stated that there is no significant association between age and choice of delivery amongwomen attending ANC at Enugu places of `delivery is the hospital is accepted.

Test of Hypothesis

Ho[1] There is no significant association between age and choice of delivery among women attending ANC at Enugu places of `delivery is the hospital.

Table 4: Relationship between age and choice of place for delivery

category	observed	expected	CHI TEST VALUE
21 – 25	34	50	
26 – 30	105	50	
31 – 35	33	50	1.80036E -17
36 – 40	28	50	

Table 4 above shows the relationship between age and choice of place for delivery

In hypothesis the **c**ritical value of (X^2) at 0.05 level of significance is 3.84, The calculated Chi-Square (X^2) value which is 1.8 is less than the table value, the Null hypothesis (Ho) is accepted . Our null hypothesis which stated that there is no significant association between age and choice of delivery among women attending ANC at Enugu places of `delivery is the hospital is accepted.

Discussion of Findings

Socio-demographic characteristics of the respondents

The result of the study showed that majority of the respondents (52%) aged 26 to 30 years while only only 14% were between 36 and 40 years and up to 89% of them married with only 11% single.This is in accordance with the biological milestone and Igbo tradition. The age group of 36 and 40 years is the peek of reproductive age and. Enugu Ngwo is a semi urban Igbo community where single motherhood is abhorred.

Their occupation showed that majority of them 70 (28%) were traders and only 2(1%) were students. Trading is a popular occupation among the Igbos and students are not likely to be getting pregnant and giving birth. The educational qualification of the respondents showed that 100% of them had at least primary education. The breakdown showed that 62 (31%) had primary education, 92(46%) had secondary education while 46(23%) had tertiary education. This showed that all the respondents had at least primary education and highlights how education is valued in Enugu Ngwo community. This did not agree with Envuladu *et al.* (2013) similar study in Jos Northern Nigeria where their result showed that majority of the women did not have any education.

Choice of places of birth delivery by of respondents

The result of the study showed that the major places for child delivery by the respondents in a descending order of preference were; government health facility 90.5%, private hopital 55%, healing home 49.5% traditional birth attendant 38%, at home 22.5% . It is a good development that majority 90.5% would prefer government health facility but up to 22.5% that would prefer to deliver their babies at home pose a great danger to mothers and their babies in the community. The study agreed with studies by Johnson *et al.,* (2020) in South - South Nigeria and Ibrahim *et al.,* (2021) in Zaria, Northern Nigeria that found utilization of similar places by women for child delivery.

Factors that determine the choice of place of delivery by the women attending ANC at the Health Centre.

Almost all the respondents (98%) identified professional competence of the health care providers and cost (96%) as the major factors influencing their choice. Majority of them also made government health facilities their preferred choice. The high educational level of the women in this community with 100% having at least primary education predisposes them to be guided be reason (Theory of Reasoned Action) before making choice. This points to the urgent need for government to train and post better qualified health workers to their health centers but higher qualified health workers will also imply higher cost for services. Another high percentage (94%) identified the attitude of the health health works as a major factor. The attitude of the health workers may be related to the level of their education and training. Dhakal, *et al* (2018) in their study on factors affecting the place of delivery among mothers residing in Jhorahat Morang, Nepal agreed that a combination of factors as above influenced choice of delivery. That only small percentage (8%) identified mother and grandmother as major factor is a good development since those group may lack the knowledge and awareness about service delivery points. Sarker *et al.,* (2016) also agreed on the importance of knowledge and awareness about service delivery points as factor in determining choice place for delivery in rural Bangladesh The result differs with the findings by Feyissa and Genemo (2014) who in Western Ethiopia found that majority of the decisions about the place of delivery were made by both mother and her spouse.

Conclusions

There is high literacy level among Women in Enugu-Ngwo community

Majority of women in Enugu-Ngwo community in the South East prefer government health facilities for delivery but a smal minority still use home delivery which can pose great danger to mothers and babies

The major factors that determine the choice of delivery among women in Enugu Ngwo Community are professional competence of the health care providers, cost of services and the attitude of the health health works.

There was no significant relationship (P = 0.05) between age and choice of places for delivery among women attending ANC clinic at Enugu Ngwo Health Center

Recommendations.

Health education, campaigns, workshops and other strategies should be used to educate the women in the community on the dangers of home delivery to change the behaviour of the few who still preferred home delivery .

The government should train and post professional health care worker to encourage continued patronage of the health center by women. There should also be seminars and workshops to change the attitude of the health workers in the government health center.

A Study should be conducted to identify the attitude of health workers at Enugu Ngwo on the health center.

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ADOLESCENT GIRLS' KNOWLEDGE AND PRACTICE OF MENSTRUAL HYGIENE IN NIGERIA: A SYSTEMATIC REVIEW

ADEKEMISOLA R. JIMOH & ELIZABETH M. JOSEPH-SHEHU

ABSTRACT

Menstrual hygiene knowledge and practices are crucial aspects of women's reproductive health. Adequate understanding and proper management during menstruation are essential for maintaining physical well-being, educational engagement, and overall quality of life for adolescent girls and women. This systematic review, conducted following PRISMA guidelines, analysed eleven studies from 2013 to 2023 on menstrual hygiene practices among adolescent girls in Nigeria. Utilizing diverse methodologies such as quasi-experimental designs and cross-sectional research, the findings revealed the impact of peer influence, educational interventions, and knowledge levels on menstrual hygiene practices. However, the study identified critical research gaps, including a lack of exploration into factors contributing to observed disparities, challenges in accessing menstrual hygiene resources, and regional and urban-rural differences. The studies emphasized the importance of knowledge in shaping menstrual practices, a comprehensive understanding of barriers faced by girls in accessing resources remains absent. Addressing these gaps is essential for informed interventions tailored to the diverse contexts of adolescent girls in Nigeria, ensuring a more comprehensive understanding of their menstrual hygiene practices and enhancing overall well-being.

INTRODUCTION

Adolescence is a critical period of development during which significant biological, cognitive, and social changes occur. This phase signifies the commencement of adolescence, accompanied by substantial alterations in hormonal concentrations and physical characteristics. (Aylwin et al., 2019). The maturation of reproductive organs, development of secondary sexual characteristics, and the initiation of the menstrual cycle in females are emblematic of the intricate biological shifts (Peltz et al., 2023). This period, with its social reorienting and evolving priorities, underscores the importance of equipping emerging adults to navigate the complexities of their communities (Bonnie et al., 2019). Adolescence signifies a critical juncture for the maturation of brain processes underpinning higher cognitive functions and emotional behaviour (Tetteh-Quarshie & Risher, 2023). This developmental stage encapsulates a transformative journey, shaping the foundation for nuanced emotional and cognitive development in preparation for adult independence.

Menstruation, a vital aspect of female puberty, marks the onset of reproductive maturity during adolescence. Typically beginning between ages 9 and 16, this monthly menstrual cycle signifies the cyclical shedding of the endometrium under the hormonal influence controlled by the hypothalamic-pituitary axis. Menarche, the onset of the first menstruation, is a singular event within puberty (Farello et al., 2019). The development of secondary sexual characteristics initiates before and continues after the first menses. Beyond its biological significance, menstruation carries profound psychosocial implications. It symbolizes a girl's transition into womanhood, fostering a sense of identity and belonging (Federici et al., 2021). However, alongside this biological milestone, many adolescents experience discomfort, commonly referred to as premenstrual symptoms. These can include physical symptoms like cramps, bloating, and headaches, as well as emotional challenges such as mood swings and irritability. The

hormonal fluctuations that trigger menstruation can impact an adolescent's daily life, affecting their mood, energy levels, and overall well-being (Bozzola et al., 2020).

Menstrual health practices and management are influenced by cultural, socioeconomic, and educational factors. Societal taboos, limited access to menstrual hygiene products, and inadequate sanitation facilities impact women's ability to manage their menstruation effectively. Economic constraints may also hinder the purchase of quality menstrual products (Asumah et al.,2022). Adolescent menstrual hygiene and health are crucial to maintaining their overall well-being during puberty. However, cultural taboos and inadequate education often surround menstruation, contributing to stigma and impacting girls' self-esteem (Berga, 2020). Adequate menstrual health and management are crucial during this time to help adolescents navigate the physical and emotional aspects of menstruation, fostering a positive attitude towards their changing bodies. (Wardana, 2020). These practices encompass utilizing sterile menstrual management products to collect or absorb menstrual blood, which can be replaced privately and frequently throughout the menstrual cycle; cleansing the body when required with soap and water; and having convenient and secure disposal facilities for discarded menstrual management products (Sahiledengle et al., 2022).

The hygiene practices women undertake during menstruation bear significant importance, given their health implications regarding heightened vulnerability to reproductive tract infections (RTI) (Prema et al., 2020). Meitei & Aditi, 2021 stated that millions of women grapple with RTI and its complications, with the infection often transmitted to the offspring of pregnant mothers. Additionally, embracing effective menstrual hygiene practices yields positive impacts on mental health. Access to quality menstrual products and education reduces stigma and empowers women, nurturing a sense of dignity and self-esteem (Adewale, 2023). It further diminishes the likelihood of anxiety or discomfort associated with inadequate menstrual protection. Menstrual hygiene management is vital to public health, and addressing this issue ensures the well-being and productivity of women, underscoring its significance in achieving broader societal health goals (Critchley et al., 2020).

Menstrual hygiene extends beyond physical health; it profoundly influences education and overall well-being (Wilson et al., 2021). Insufficient menstrual hygiene management acts as a hindrance to girls' education, leading to increased absenteeism and a higher risk of dropout (Mohammed et al., 2020). Research indicates that the challenges girls face in effectively managing their menstrual periods in a school setting contribute to school absenteeism (Bassey et al., 2021; Sahiledengle et al., 2022). Consequently, this hampers their development and aspirations, imposing significant economic costs on their lives and, by extension, the country. Menstrual hygiene also profoundly influences social and psychological dimensions. Robust menstrual hygiene practices play a pivotal role in mitigating societal stigmas, while access to proper products correlates with diminished psychological distress, enabling women to navigate menstruation with equanimity (van Lonkhuijzen et al., 2023; Wiedermann et al., 2023).

Adolescent girls face numerous challenges related to menstrual health that impact their well-being and daily lives. Physical challenges involve insufficient access to water, sanitation, and hygiene (WASH) facilities and a shortage of quality absorbent materials and disposal options (Sood et al., 2022). Additionally, inadequate privacy, especially in resource-poor settings, further compromises hygiene standards (Watson et al., 2019). Psychosocial barriers, rooted in cultural taboos and stigmas surrounding menstruation, also hinder adolescents from seeking guidance on menstrual hygiene management (MHM) (Bassey et al., 2021). This leads to poor knowledge, insufficient social support, and instances of teasing, stress, and embarrassment, affecting confidence during menstruation (Hennegan et al., 2019).

Inadequate menstrual hygiene practices have far-reaching consequences, subjecting women to reproductive and urogenital infections, psychosocial stress, and constraining educational and occupational opportunities (Anbesu & Asgedom, 2023). These practices foster the development of morbid conditions, encompassing reproductive and urinary tract infections, along with potential long-term health risks like infertility and cancer (Girigoswami et al., 2023). Knowledge regarding menstrual hygiene proves crucial in averting these adverse effects, as informed women exhibit reduced susceptibility to reproductive tract infections. Poor menstrual hygiene aligns with school absenteeism, withdrawal, reproductive issues, and urinary tract infections, impacting academic performance, self-esteem, and the pursuit of higher education (Belayneh & Mekuriaw, 2019). Beyond physical ramifications, insufficient resources and knowledge contribute to psychological distress among adolescent girls, hampering self-esteem and impeding the development of a positive self-image (Nwimo et al., 2022).

The school environment is pivotal in shaping adolescent girls' knowledge and practice of menstrual hygiene, as evidenced by recent scholarly articles. Educational institutions serve as crucial platforms for disseminating accurate information about menstruation, dispelling myths, and fostering positive attitudes towards menstrual health (Belayneh & Mekuriaw 2019). Comprehensive menstrual hygiene education in schools has been linked to improved awareness, reduced stigma, and enhanced hygienic practices among adolescent girls. A study by Nnennaya et al (2021) highlights the correlation between targeted menstrual education programs in schools and increased menstrual hygiene management among adolescent girls. Additionally, schools provide a supportive environment for the provision of menstrual hygiene products and facilities, ensuring girls' dignity and promoting regular attendance (Deshpande et al., 2018; Shah et al., 2023)

Belayneh & Mekuriaw (2019) revealed inadequate knowledge among adolescent girls about menstruation, leading to unhygienic practices. Aluko et al. (2014) also revealed that majority of adolescent have a good knowledge of menstrual hygiene practices. This finding was contradicted by Fehintola et al. (2017) who stated that despite good knowledge, many adolescents did not observe proper hygienic practices. Edet et al. (2020) also asserted significant disparities in knowledge levels of menstrual hygiene practices among adolescents. Following the disparate findings in existing research, a systematic review on the knowledge and practice of menstrual hygiene among adolescents is crucial. A comprehensive synthesis of these findings can elucidate patterns, identify influencing factors, and highlight research gaps. This review would inform targeted interventions to bridge knowledge gaps and promote consistent, healthy menstrual hygiene practices among adolescents, ultimately contributing to their overall well-being and empowerment.

METHODOLOGY

This study adopted the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for conducting a systematic review. The search strategy was created after an initial evaluation of adolescent girls' knowledge and practice of menstrual hygiene. Research journals (full texts and abstracts) were located using online databases such as Scopus, Medline, CINAHL, PsycINFO, Cochrane, Google Scholar and Web of Science to retrieved article published between 2013 and 2023. Search terms used in the study included ("Evaluation" OR "Assessment") AND "Knowledge of Menstrual Hygiene Practices" AND "Adolescent Girls". Figure 1 shows the search protocol using the PRISMA method.

Inclusion/Exclusion Criteria

The following criteria were met by studies included in this review: (1) focused on

assessment of adolescent girls' knowledge and practice of menstrual hygiene between 10- 19 years (2) Peer-reviewed journal articles, conference papers, and reputable scientific sources (3) cross-sectional studies, cohort studies, intervention studies, and qualitative research (4) published between 2013 and 2023 (5) published in English language (6) focused on Nigeria (7) conducted in schools, communities, or healthcare facilities (8) accessible in full text (9) Keywords such as menstrual hygiene, adolescent girls, knowledge, menstrual hygiene practices, adolescent health, menstrual education, girls' health, menstrual hygiene management, adolescent reproductive health, menstrual health awareness, menstrual education programs, menstrual hygiene interventions, adolescent health education, girls' reproductive health and menstrual hygiene behavior were used for filtering articles during the preliminary screening. Finally, eleven (11) articles were identified for this study.

Figure 1: Visual presentation of the article selection process.

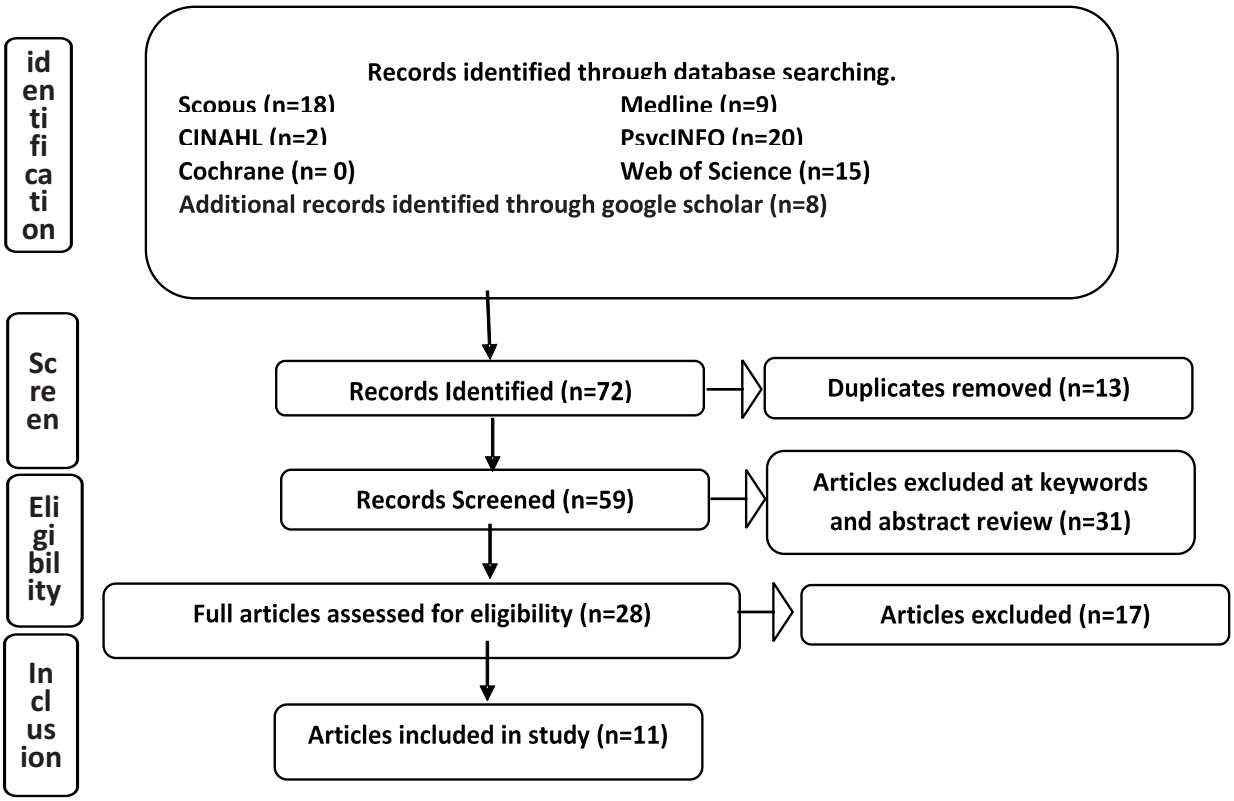

Table 1: Summary of Table for Systematic Review

Author, year	Methodology	Study population/ participants	Key findings	Research gap
Agbede & Ekeanyanwu (2021)	quasi-experimental design	120 adolescent schoolgirls in Ogun State.	Peer groups, educational interventions, and peer educators have significant impact on adolescent girls' menstrual hygiene practices.	The study did not evaluate the cultural, socio-economic, or regional factors influencing menstrual hygiene practices
Aluko et al (2014)	cross-sectional design	400 adolescent schoolgirls in Ile-Ife	Majority of respondents have good knowledge of menstrual hygiene practices	there is a notable research gap in exploring the underlying factors contributing to the observed disparities of menstrual hygiene practices
Fehintola et al. (2017)	cross-sectional study	447 adolescent school girls in Ogbomosho	The majority of adolescents do not observe good hygienic practice during menstruation despite relatively good knowledge of menstruation and menstrual hygiene	The study did not investigate factors resulting in the poor menstrual hygienic practices.
Okafor-Terver & Chuemchit (2017)	Cross-sectional study	395 Adolescents in Katsina	The study revealed poor menstrual health knowledge and an association between respondents' knowledge, beliefs, enabling factors, and the level of menstrual hygiene practice.	The research may be limited by language and beliefs system different to other regions of the country
Nnennaya et al (2021)	Cross sectional study	297 adolescent school girls	The study identified a significant association between knowledge and good menstrual hygiene management emphasizing the critical role of accurate information in shaping hygiene practices among adolescent girls.	the study did not delve into specific challenges or barriers faced by adolescent girls in accessing sanitary pads and other menstrual hygiene management facilities.
Nwimo et al (2022)	Cross sectional study	600 ado lescent school girls in Ebonyi	The study revealed poor menstrual hygiene management practices	There is a research gap in understanding the specific factors

Nwimo et al (2022)	Cross sectional study	600 ado lescent school girls in Ebonyi	The study revealed poor menstrual hygiene management practices among adolescent girls, contributing to significant distress levels	There is a research gap in understanding the specific factors contributing to inadequate menstrual hygiene management among adolescent girls, such as cultural influences, education levels, and access to menstrual hygiene resources
Garba et al (2018)	Cross sectional study	219 school girls in Kano	There was good menstrual hygiene among adolescent school girls in Kano, with sanitary pads being the most utilized menstrual absorbent.	The study was restricted to the urban part of the state, while neglecting the rural communities
Edet et al. (2020)	Cross sectional study	1006 students in Cross-rivers	The study reveals a significant urban-rural gap in the knowledge of menstruation and menstrual hygiene, with a higher prevalence of poor knowledge among rural students compared to their urban counterparts.	The study did not indicate the socioeconomic factors responsible for the rural-urban gap in knowledge of menstruation and menstrual hygiene.
Olabanjo et al (2014)	Multistage study	382 adolescent school girls from ile-ife	The study revealed an inadequate knowledge and misconceptions among in - school adolescents regarding menstruation.	The study does not delve into factors associated with differences in knowledge levels between public and private school students.
Rumun & Peter (2014)	Cross sectional study	200 school girls in Markurdi	The study revealed a good practice of menstrual hygiene, with the prevalent use of sanitary pads and regular changing of absorbents among respondents	The study did not investigate factor responsible for the use of reusable cloth by the respondents who indicated it.
Uwadia et al (2022)	Cross sectional study	420 school girls in Badagry	The study revealed inadequacy of basic school WASH services, unconducive environment and poor menstrual hygiene among students	The study did not reveal the contribution of inadequate WASH facilitates to unhealthy menstrual health management.

RESULTS

This systematic review analysed eleven research conducted from 2013 to 2023, specifically investigating menstrual hygiene practises among adolescent females in Nigeria. The studies differ in their approach, the number of participants, and the places where they were conducted. This provides a detailed overview of the topic and reveals the importance of peer influence, educational interventions, and knowledge levels in altering the menstrual hygiene practises of teenage girls. The evaluated works utilise a variety of techniques, including quasi-experimental designs and cross-sectional research, which offer a combination of qualitative and quantitative insights. The evaluation primarily consisted of cross-sectional research that provided limited insights into the menstrual hygiene practises of adolescent females at distinct moments in time. Most studies depend on data provided by individuals themselves and employ questionnaires to collect information, which restricts the extent of in-depth qualitative investigation.

The subjects in these research investigations consist of adolescent female students hailing from several locations in Nigeria, including Ogun State, Ile-Ife, Ogbomosho, Katsina, Ebonyi, Kano, Cross-Rivers, and Badagry. The sample size varies from 200 to 1006, encompassing a significant portion of the adolescent female population. The collective findings of the studies revealed several themes, including a significant correlation between peer influence, educational interventions, and enhanced menstrual hygiene practises among adolescent girls. Nevertheless, the analysis also highlighted the presence of a significant research gap in comprehending the wider cultural, socio-economic, and regional elements that impact these practises.

DISCUSSION

Menstrual hygiene has a vital role in the health and well-being of adolescent girls, affecting not only their physical well-being but also their education and overall quality of life. Several studies revealed emphasised the impact of different factors on the menstrual hygiene practises of adolescent girls. Agbede & Ekeanyanwu (2021) highlighted the beneficial influence of peer groups, educational programmes, and peer educators on the adoption of proper menstrual hygiene practises. Aluko et al. (2014) and Rumun & Peter (2014) both acknowledged the significance of knowledge. Aluko et al. (2014) found that respondents had good knowledge, whereas Rumun & Peter (2014) equated good practises to the widespread usage of sanitary pads and regular change of absorbents.

In contrast, Fehintola et al. (2017), Nwimo et al. (2022), and Uwadia et al. (2022) present disconcerting findings on inadequate menstrual hygiene practises among adolescent females. Fehintola et al. (2017) and Uwadia et al. (2022) established a correlation between substandard practises and insufficient facilities as well as an unsatisfactory environment. Nwimo et al. (2022) emphasise the distress resulting from insufficient practises in managing menstrual hygiene. Edet et al. (2020) discovered a disparity between urban and rural areas in terms of knowledge, where rural students demonstrated less awareness of menstruation and menstrual hygiene compared to their urban peers. Garba et al. (2018) also identified regional differences, specifically observing that urban girls in Kano exhibit satisfactory menstrual hygiene practises. Nevertheless, the study had a restricted scope and failed to consider rural communities.

Nnennaya et al. (2021) emphasised the correlation between knowledge and effective management of menstrual hygiene, underscoring the crucial influence of precise information in changing behaviours among adolescent females. Olabanjo et al. (2014) also revealed that in-school teenagers had insufficient information and have misunderstandings about menstruation. The reviewed studies predominantly focus on knowledge levels and practices of menstrual hygiene among adolescent girls. While the

studies reported varying knowledge of menstrual hygiene practices among respondents, the studies consistently point to a lack of exploration into the underlying factors contributing to the observed disparities in menstrual hygiene practices. This represents a significant research gap in understanding the nuanced dynamics influencing adolescent girls' behaviours during menstruation. Additionally, the utilization of sanitary pads emerged as a common trend, with varying degrees of availability and utilization reported across studies. However, there is a dearth of exploration into specific challenges or barriers faced by adolescent girls in accessing sanitary pads and other menstrual hygiene management facilities as some girls reportedly still used clothes as absorbent materials.

The studies also highlight the importance of knowledge in shaping menstrual hygiene practices. Notably, Nnennaya et al. (2021) emphasize the critical role of accurate information in promoting good menstrual hygiene management among adolescent girls. Nonetheless, a comprehensive examination of the challenges and barriers faced by girls in accessing menstrual hygiene resources and information is notably absent. Garba et al. (2018) and Edet et al. (2020) revealed regional and urban-rural disparities in menstrual hygiene practices but left gaps in understanding the unique challenges faced by rural communities or advantages of urban communities. This is similar to the findings of Olabanjo et al. (2014), who revealed differences in knowledge levels between public and private school students. It is therefore important to investigate the unique features of rural- urban communities as well as public-private schools to establish a causal association in the menstrual hygiene practices. While the reviewed studies contribute valuable insights, these notable research gaps must be addressed to form a more comprehensive understanding of menstrual hygiene practices among adolescent girls.

CONCLUSION

The study revealed varying knowledge of menstrual hygiene practices and underscored the influence of peer dynamics, educational interventions, and knowledge levels on menstrual hygiene practices. The study revealed research gaps in the lack of exploration into the underlying factors contributing to observed disparities in menstrual hygiene practices, the challenges and barriers faced by adolescent girls in accessing menstrual hygiene resources and regional and urban-rural disparities. Addressing these gaps is crucial for a more comprehensive understanding of adolescent girls' menstrual hygiene practices and for informing targeted interventions tailored to the adolescent population across Nigeria.

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KNOWLEDGE AND PREVENTION OF HYPERTENSION AMONG PATIENTS ATTENDING MEDICAL OUTPATIENT DEPARTMENT OF GARKI HOSPITAL, ABUJA, FEDERAL CAPITAL TERRITORY, NIGERIA

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ABSTRACT

This study was carried out to assess the knowledge and prevention of hypertension among patients attending the medical outpatient department of Garki Hospital, Abuja, FCT. This work investigated the knowledge and prevention of hypertension among patients attending the Medical Outpatient Department (MOPD). A descriptive research design was adopted for this study, and a total of 100 patients were selected who participated fully in the study. A well-developed questionnaire was used for data collection, and the collected data were analyzed using simple percentages and Chi-square. The socio-demographic characteristics of respondents revealed that the majority of respondents were within 28 to 37 years (33%), female (68%), and Christians (72%). Further findings showed that the majority of respondents were single (63%), with tertiary education (78%), and employed (66%). This study revealed that respondents were highly knowledgeable about hypertension (72%) and hypertension preventive measures among patients were very high (75%). The following recommendations were made: there should be more awareness about hypertension among both educated and illiterate people; there should be general health education about the causes of hypertension; and there should be a new policy on hypertension health care in Nigeria.

INTRODUCTION

Hypertension, defined as a medical condition characterized by elevated blood pressure exceeding 140 over 90 mmHg, poses a significant health risk to individuals. This condition places added strain on the heart as it works harder to circulate blood through the arteries. Complicating matters, hypertension often progresses without manifesting noticeable symptoms, making early detection challenging for many patients (El-Hay & El-Mezayen, 2015). Blood pressure readings are typically represented as two values: systolic and diastolic. The systolic value reflects the highest pressure exerted on the arteries during heart contraction, while the diastolic value represents the lowest pressure just before the heart begins to contract again. For instance, a blood pressure reading of 120/80 mmHg is articulated as "120 over 80" millimeters of mercury (Mark et al., 2003). Hypertension is diagnosed when the systolic pressure at rest averages 140 mmHg or higher and the diastolic pressure averages 90 mmHg or higher. In some cases, particularly among older individuals, isolated systolic hypertension may occur, where systolic pressure is high (140 mmHg or more) while diastolic pressure remains normal or low (less than 90 mmHg).

Hypertension is a significant public health issue and is a primary contributor to illness and death worldwide. It is a significant autonomous risk factor for cardiovascular and cerebrovascular events, such as stroke, cardiac mortality, coronary heart disease, heart failure, abdominal aortic aneurysm, and peripheral vascular disease (Kokubo & Matsumoto, 2017). Each year, almost 9.4 million fatalities are linked to complications of hypertension, indicating a significant and continuous rise in the global incidence of the condition (Rajan et al., 2019). It is sometimes referred to as "the silent killer" since it often remains asymptomatic for many years until it causes harm to a crucial organ. This highlights the need to give sufficient consideration to hypertension and hypertensive diseases, especially in resource-limited countries such as Nigeria, where there is limited access to healthcare and a low inclination among the

public to seek medical help (Adedini et al., 2014).

Hypertension denotes elevated blood pressure, irrespective of its underlying reason. Elevated blood pressure that is not regulated raises the likelihood of complications such as stroke, aneurysm, cardiac failure, myocardial infarction, and renal impairment (Mark et al., 2003). Hypertension is a prevalent and intricate chronic condition that poses a significant global burden. It is characterized by a consistent increase in blood pressure above the typical range of 115–120 mmHg systolic and 75–80 mmHg diastolic pressure (Famakinwa, 2002). Hypertension often manifests as a silent ailment without distinct early signs. However, it is the most widespread contributor to cardiovascular accidents and congestive heart failure. Additionally, it often leads to complications such as coronary artery disease and renal failure. According to the World Health Organization (2006), blood pressure below 140/90 mmHg is considered normal, whereas blood pressure above 160/90 mmHg or more is categorized as hypertensive.

It is apparent that most people are hypertensive without even knowing it; about 4.33 million Nigerians within the age group of 15 years and older are hypertensive (Ogah, 2006). Hypertension is known to be a common chronic disorder, a complex health problem, and a major challenge in healthcare. It is usually an insidious condition with no specific perceptible symptom at an early stage, yet it is the most prevalent cause of cardiovascular accidents and congestive heart failure. A significant percentage of Nigerian adults are hypertensive, and it is more prevalent among adult servants and business executives (Famakinwa, 2002). It was also discovered that blacks have high consequences for the disease. Various reports of work carried out revealed that Nigeria has a prevalence rate of about 10–12%. Efforts to control hypertension have included improving public knowledge and awareness of the risks and complications of hypertension (Oliveria et al., 2005). However, it is unclear if this translates to proper knowledge and an appropriate attitude in the general public as well as in individuals already diagnosed with hypertension. It is, therefore, paramount that information concerning all aspects of the disease be readily available to the general population, but particularly to patients with elevated BP. Based on this argument, the purpose of the study was to assess the knowledge of hypertension among patients attending the medical outpatient department of Garki Hospital, Abuja, FCT. Various risk factors contribute to the development of hypertension. Genetic predisposition and a family history of the condition are significant factors. Additionally, lifestyle choices such as tobacco use, a diet high in salt and saturated fat, and a sedentary lifestyle increase the risk of hypertension. Other contributing factors include diabetes mellitus, stress, poor sleep, and pregnancy (Okeke et al., 2017).

Hypertension often goes undiagnosed for extended periods, leading to severe health complications such as organ damage, particularly in the brain and kidneys. The long-term effects of hypertension underscore the importance of timely diagnosis and management. Age, gender, race, physical activity levels, obesity, smoking, dietary habits, and hormonal changes are identified as risk factors, and recognizing these elements is crucial for developing strategies to reduce preventable risk factors. These strategies may include addressing weight management, reducing salt intake, quitting smoking, and moderating alcohol consumption (El-Hay and El-Mezayen, 2015). Early identification and effective management of hypertension and its associated risk factors are imperative for promoting long-term cardiovascular health and preventing complications.

Hypertension is the most frequent underlying risk factor for cardiovascular disease in Sub-Saharan Africa. Prevention, diagnosis, treatment, and management of hypertension in this region are inconsistent and not optimal. Inadequate funding for healthcare systems, ineffective community-level preventative measures, unsustainable pharmaceutical

treatments, and barriers to full compliance with prescribed medications are the root causes of this (Okeke et al., 2017). In his research, Ogah (2006) found that the crude prevalence of hypertension was 11.2% based on a blood pressure threshold of 160/95 mmHg. After adjusting for age, the prevalence was 9.3%, indicating that almost 4.33 million Nigerians aged 15 years and older are hypertensive. According to Basauanhappa (2008), there are almost 25 million instances of hypertension in India, with a prevalence of 10% among the adult population in urban areas and 5% in rural areas.

The age-adjusted prevalence of hypertension in Nigeria was found to be 14.3% in research undertaken by the worldwide collaborative study of hypertension in blacks. The prevalence rates were 14.7% for males and 14.3% for women (Ogah, 2006). Significant advancements have been achieved in the identification, management, and regulation of hypertension in the United States during the last twenty years. From 1976 to 1980, half of people with hypertension were oblivious to their condition. 70% did not get treatment, while only around 10% had their blood pressure well managed. According to Ogah (2006), less than a quarter of Africans are aware that hypertension may result in stroke and heart disease.

According to a study by Viera et al. (2010) on Africans, from 2005 to 2009, almost 75% of adults were aware that they had hypertension, 65% were receiving treatment for it, and 37% had their blood pressure under control. Although progress has been made, hypertension continues to be a significant public health issue for African people. The number of those uninformed about hypertension has fallen by 25% since 1990, while the percentage of those with controlled blood pressure has climbed to 47%. Over 16 million Nigerian people today have uncontrolled blood pressure. Recent studies have shown inadequacies in the awareness, treatment, and management of hypertension, which are ascribed to patients' lack of information, perception, and lifestyle.

Mohammedirfan et al. (2011) found that hypertension prevalence rose by 30 times in urban populations over 55 years and by 10 times in rural populations over 36 years. It is more prevalent among those in higher socioeconomic classes due to several reasons, including sedentary occupations, a lack of physical exercise, unhealthy food, alcohol consumption, smoking, obesity, and conditions like diabetes mellitus. Individuals in this category often encounter psychological distress. Urbanization, tiny or nuclear family structures, dual-income households, and issues related to wealth also have a role in causing mental stress. The overall prevalence of hypertension was determined to be 30.4%.

Hypertension prevalence in Nigeria is rising due to the expanding adult population and changes in Nigerians' lifestyles. Over the last twenty years, there has been an increase in prevalence research focusing on hypertension and other non-communicable disorders. In 2011, the prevalence of hypertension ranged from 6.2% to 48.9% in men and 10% to 47.3% in females, based on a blood pressure benchmark of 140/90 mmHg. The crude prevalence among Nigerian people aged 18 years and older was found to range from 2.1% to 47.2% with a 95% confidence interval (Ukoha-Kalu et al., 2020). If control measures are not implemented, about 56 million individuals will have hypertension by 2025 (Kongarasan & Shah, 2018). Hypertension often presents without symptoms and is often identified via regular screenings or incidentally while seeking medical attention for an unrelated issue at a hospital. Patients often only realize their target organ damage, congestive heart failure, peripheral vascular disease, or chronic kidney disease (Okeke et al., 2017).

Approaches to Prevent Hypertension

Reducing salt intake can help keep blood pressure within normal ranges (Ogedengbe, 2012). To reduce salt intake, one can avoid packaged and processed foods and refrain from

adding extra salt after cooking meals. Limiting alcohol consumption is also crucial, as drinking alcohol can lead to high blood pressure. Alcohol consumption should be reduced to the bare minimum or completely avoided.

Regular monitoring of blood pressure is essential. High blood pressure often occurs without symptoms, so only blood pressure readings can confirm hypertension. Aerobic exercises, such as jogging, brisk walking, biking, and playing table tennis, can help burn more calories than active exercise (Beer et al., 2003). Understanding hypertension and its management can help lower high blood pressure in hypertensive individuals (Samal et al., 2007).

According to Wang et al. (2003), the awareness and preventive rate of hypertension in urban patients is 46.4%, while in rural patients it is 23.9%. The control rate of hypertension improves when patients' understanding and management of the condition is enhanced, regardless of whether they live in rural or urban areas. The combined impact of awareness of hypertension and control status might account for 30% of the variation in hypertension control rates between rural and urban patients. Wang et al. (2012) found a substantial relationship between knowledge of hypertension management and the actual rate of hypertension control. They suggested that health education could significantly enhance knowledge, perception, and control of hypertension. This study assesses the knowledge and prevention of hypertension among patients attending the medical outpatient department of Garki Hospital, Abuja, FCT.

OBJECTIVES OF THE STUDY

i. To investigate the knowledge of Hypertension among patients attending Medical Outpatient Department (MOPD) of Garki Hospital Abuja, FCT.

ii. To determine the prevention level of Hypertension among patients attending Medical Outpatient Department (MOPD) of Garki Hospital Abuja, FCT.

iii. To assess effect of their knowledge of hypertension on the preventive measures among patients attending Medical Outpatient of Garki Hospital Abuja, FCT.

The corresponding research questions for the study were:

i. What level of knowledge has the patients of Garki Hospital Abuja, FCT about Hypertension?

ii. What is the prevention level of Hypertension among patients attending Medical Outpatient Department (MOPD) of Garki Hospital Abuja, FCT.

iii. What is the effect of patients' knowledge on the preventive measures of Hypertension?

METHODOLOGY

Design: The research design used for this study was a descriptive non-experimental design. This design facilitated the collection of information on the knowledge of hypertension among patients in the Medical Outpatient Department (MOPD) of Garki General Hospital, FCT Abuja.

Setting and Population: The study population consisted of 100 patients from the medical outpatient department clinic and wards.

Sampling Technique: The total population was used.

Instruments: Data collection was conducted using self-structured questionnaires. The questionnaire was divided into three sections: Section A covered demographic data, Section B assessed knowledge of hypertension, and Section C focused on the prevention of hypertension.

Validity of the Tool: The questionnaire, along with the research objectives, was submitted to a jury of experts in nursing sciences and medicine. Necessary corrections and suggestions were incorporated into the final version. Content and face validity were established by aligning the study objectives and constructs within the framework with the specific questions on the instrument.

Reliability of the Tool: To ensure reliability, the instrument was pretested with 10 respondents, representing approximately 10% of the study population. Internal consistency was assessed to determine the correlation between multiple items in a test intended to measure the same construct. The reliability was analyzed using Cronbach's alpha, which yielded a reliability coefficient of 0.78. The reliability coefficient ranges between 0 and 1; the closer the coefficient is to 1, the more reliable the instrument. Therefore, the instrument is considered reliable.

Data Collection: Copies of questionnaires were shared among the patients to be filled and collected back immediately.

Data Analysis: The data collected analysed using simple percentages and Chi-square statistics.

RESULTS

Table 1 observed that the age range of respondents is as follows: 18–27 years (19%), 28–37 years (33%), 38–47 years (28%), 48–57 years (11%), 58–67 years (6%), and 68 years and above. The gender distribution of respondents includes 32% male and 68% female. The findings reveal the religious affiliations of respondents as Christianity (72%), Islam (28%), and traditional religions (0%). Marital status of respondents shows that 29% are married, 63% are single, 3% are divorced, 3% are widowed, and 2% are separated. The educational qualifications of respondents include primary education (1%), secondary education (12%), tertiary education (78%), and non-formal education (9%). Employment status of respondents indicates that 66% are employed, 12% are unemployed, 20% are self-employed, and 2% are retired. The socio-demographic characteristics of respondents reveal that the majority of respondents are within the age range of 28 to 37 years (33%), female (68%), and Christian (72%). Further findings show that the majority of respondents are single (63%), have tertiary education (78%), and are employed (66%).

Table 1: Socio-demographic data

S/N	Variable	Frequency Number	Percentage (%)
1	Age:		
	18 – 27	19	19
	28 – 37	33	33
	38 – 47	28	28
	48 – 57	11	11
	58 – 67	06	06
	68 – 70	04	04
	70 and above	01	01
	Total	**100**	**100**
2	Gender:		
	Male	32	32
	Female	68	68
	Total	**100**	**100**
3	Religion:		
	Christianity	72	72
	Islam	28	28
	Traditional	0	0
	Total	**100**	**100**

4	Marital Status:		
	Single	29	29
	Married	63	63
	Divorced	03	03
	Widow	03	03
	Separated	02	02
	Total	**100**	**100**
5	Qualification:		
	Primary	01	01
	Secondary	12	12
	Tertiary	78	78
	Non-formal education	09	09
	Total	**100**	**100**
6	Employment:		
	Employed	66	66
	Unemployed	12	12
	Self-employed	20	20
	Retired	02	02
	Total	**100**	**100**

Table 2 reveals a high level of knowledge about hypertension among respondents. Most respondents learned about hypertension from hospitals (40%) and parents (24%), with nearly all (99%) correctly defining the condition. A significant majority (93%) acknowledged hypertension as a cause of early death, and 75% recognized headaches and a rise in blood pressure as its primary symptoms. Furthermore, 95% agreed that heredity is a predisposing factor, and 84% saw a link between food intake habits and hypertension. Overall, 72% of respondents were highly knowledgeable about hypertension, indicating effective awareness and educational initiatives within the community.

Table 2: Knowledge Assessment of the Respondents

SN	Statements	SA	A	SD	D
1	Hypertension is a persistent raise in blood pressure	77	1		
2	Hypertensions is one of the causes of early death	52	41	5	2
3	Regular check of blood pressure helps to know one's status	80	20		
4a	What are the common signs and symptoms of Hypertension? Headache	5	3		
4b	Rise in blood pressure	9	6		
4c	All of the above	60	15	1	
5	Heredity can be a pre-disposing factor for hypertension	52	43	5	
6	There is a relationship between food intake habit and hypertension	43	41	15	1
7	Hypertension poses a significant health risk to individual	34	6		
8	prevalence of hypertension is more in men than women	35	5		
9	Hypertension often presents without symptom	19	1	52	20

Table 3 shows the level of hypertension preventive measures. 88% of the respondents agreed that patients who control their pressure live longer than others, while 2% disagreed that patients who control their blood pressure live longer than others. This shows that the majority (88%) of the respondents agreed that patients who control their blood pressure live longer than others. How to prevent hypertension: 7% of the respondents agreed that by eating adequate diets, 9% of the respondents agreed that by performing adequate exercises, 79% of the respondents agreed that by eating adequate diets and by performing adequate exercises, and 4% of the respondents disagreed. This shows that the highest percentage (79%) of the respondents agreed that hypertension can be prevented by eating adequate diets and by performing adequate exercises. To reduce or prevent the incidence of hypertension, 97% of the respondents agreed that a reduction in salt intake reduces or prevents the incidence of hypertension, while only 3% of the respondents disagreed. This shows that the majority (97%) of the respondents agreed that a reduction in salt intake reduces or prevents the incidence of hypertension.

Types of exercise best for hypertensive patients: 7% of the respondents agreed on jogging, 27% of the respondents agreed on walking, 3% of the respondents agreed on cycling, 54% of the respondents agreed on jogging, running, walking, and cycling, while 3% of the respondents disagreed and 3% of the respondents agreed on none of the above. This shows that above average (54%) of the respondents agreed on jogging, running, walking, and cycling as the best types of

exercise for hypertensive patients. 99% of the respondents agreed that someone's knowledge of hypertension can help in its prevention and management, while only 1% disagreed. This shows that almost all the respondents (99%) agreed that someone's knowledge of hypertension can help in the prevention and management of the illness. The types of diet advisable for people with hypertension: 1% of the respondents agreed on carbohydrates, 1% of the respondents agreed on a fatty diet, 91% of the respondents agreed on foods low in carbohydrates and fats with proteins and vegetables, and 4% of the respondents agreed on proteins. Although 3% of the respondents agreed on none of the above, this shows that the majority of the respondents agreed that a diet low in carbohydrates and fats with proteins and vegetables is advisable for people living with hypertension. This study noted that the level of hypertension preventive measures among patients is very high (75%)

Table 3: The level of hypertension preventive measures among patients

S/N	Variables	Responses			
		Strongly Agree	Agree	Strongly Disagree	Disagree
1.	Hypertensive patients who controls their blood pressure live longer than others	53	35	09	03
2.	How can hypertension be prevented?				
	Eat adequate diet	04	03	-	-
	Performing adequate exercise	07	02	-	-
	All of the above	61	18	01	-
	None of the above	03	01	-	-
3.	Reduction in salt intake reduces/prevents the incidence of hypertension	62	35	02	01
4.	What type of exercise is best for hypertensive patients?				
	Jogging	07	-	-	-
	Running	-	-	-	-
	Walking	15	12	-	-
	Cycling	01	02	-	-
	All of the above	44	10	03	-
	None of the above	-	03	-	-
5.	Exercise reduces the Incidence of hypertension	53	43	02	02

6. One's knowledge of hypertension can help in the prevention and management	65	34	01	-
7. What type of diet is advisable for people with hypertension?				
Carbohydrates	01	-	-	-
Fatty diet	-	01	-	-
8. Food low in carbohydrates and fats with protein and vegetables	67	24	-	-
proteins	02	02	-	-
None of the above	-	03	-	-
	48%		27%	

Discussion of Findings

This study assesses the knowledge and prevention of hypertension among patients attending the medical outpatient department of Garki Hospital, Abuja, FCT. The socio-demographic characteristics of respondents revealed that majority of respondents are within 28 to 37years, female and Christians. Further finding show that majority of respondents are single, with tertiary education and employed.

Knowledge of Hypertension

The patients at Garki Hospital are highly knowledgeable about hypertension. This study agrees with the research of Wang *et al.* (2012), who found that their respondents are knowledgeable This result is also consistent with the report of El-Hay and El-Mezayen (2015) on their respondents' knowledge on hypertension

Knowledge about the preventive measures of hypertension

This study noted that the level of hypertension preventive measures among patients is very high. This study agrees with the findings of Ogedengbe (2012), who found that their respondents preventive level of hypertension is high. This study is also consistent with the work of Ukoha-Kalu*et al.* (2020), who found that there is a direct relationship between a patient's knowledge of hypertension and the management of their illnesses.

CONCLUSION

The study sheds light on the commendable awareness levels among respondents regarding hypertension, its causes, and preventive measures. The findings underscore the importance of continued health education efforts to empower individuals in proactively managing their cardiovascular health and mitigating the risks associated with hypertension. According to the research findings, a substantial number of respondents became acquainted with information about hypertension through diverse channels, including hospitals, parents, books, friends, and media, highlighting the multi-faceted nature of public awareness efforts. Key insights from the study indicate a high level of

understanding among respondents, with 99% recognizing hypertension as a persistent elevation in blood pressure. Impressively, 82% of respondents identified key lifestyle factors, including obesity, excessive alcohol and salt intake, emotional states, and unnecessary stress, as primary contributors to hypertension.

RECOMMENDATIONS

Based on the findings, it was recommended to enhance public awareness programs about hypertension by strengthening and expanding efforts, emphasizing its status as a "silent killer" and the importance of regular blood pressure monitoring. Additionally, diversifying information channels by utilizing various platforms, including hospitals, media, books, and social networks, to disseminate information about hypertension should be continued. Exploring new platforms to reach a broader audience should also be considered.

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SOCIO-CULTURAL FACTORS INFLUENCING NUTRITIONAL STATUS IN UNDER-FIVE CHILDREN IN AKURE NORTH LOCAL GOVERNMENT, ONDO STATE, NIGERIA

OYEWUMI ZACCHEUS OPEYEMI; AKINBOWALE BUSAYO TEMILOLA & OYEWUMI LYDIA OMOWUMI

ABSTRACT

Mortality resulting from under-nutrition among under-five children globally is unprecedented and factors influencing the poor nutritional status among this age group needs to be looked into as nutritional status of the under-five is of great importance since this period of life is considered a pivotal for their adequate growth. The main objective of this study was to assess the socio-cultural factors influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State. The targeted population was women between the age ranges of 18- 49 years who were currently nursing under-five children. Kish Leslie (1965) single proportion population formula was used to calculate the sample size of 377. A simple random sampling method was used to select four villages out of 12 autonomous villages in the local government. The exponential non-discriminative snowball sampling technique was used to select the respondents. Data collection was done by using an unstructured questionnaire having tested its validity and reliability. Data were analyzed using descriptive (frequency, percentages) and mean including standard deviation statistics. The demographic characteristic of this study shows that majority of the respondents are between ages 25 to 29 (36.3%), business is their occupation (39.5%) and had tertiary education (27.1%). Majority of the respondents are married (83.6%), catholic by religion (53.3%) with 2 children (32.1%).This study therefore indicates that unemployment and low wages (62%), cheaper and less nutritious food (70%), poor education (X=3.19), traditional breast feeding practices (58.4%) and feeding patterns (X= 2.95) were socio-cultural factors influencing the nutritional status of under-five children. The study concluded that the above identified factors have strong negative influence on the nutritional status of the under-five children, hence, the community health nurses should do more in educating the women on the danger posed by the identified factors to the nutritional status of their children and steps to reducing their impacts on their wards should be encouraged.

Keywords: Socio-cultural; under-five Children; Nutritional Status

INTRODUCTION

Mortality resulting from under-nutrition among under-five children globally is unprecedented and factors influencing the poor nutritional status among this age group need to be looked into as nutritional status of the under-five is of great importance since this period of life is considered a pivotal for their adequate growth (Badake et al, 2014). Over 10 million children under-five are lost annually due to diseases that can be prevented and even easily treated, with most of these illnesses and deaths occurring in developing countries due to their poor economy (Black et al, 2003). Malnutrition is responsible for more than 30% of all deaths among children under-five (UNICEF, 2009). Child nutrition plays a crucial role in infant and child health or death, with young children, pregnant women, and lactating mothers being the most nutritionally vulnerable group, especially in developing countries.

However, relatively little is done to address their special nutritional needs. In contrast, good nutrition ensures healthier children who grow into more productive adults, while poor nutrition leads to malnutrition (Oyira et al, 2010). In developed countries and many traditional societies, early feeding is considered a determinant of later character, growth, and health. Malnutrition has long been recognized as a consequence of poverty, as most of the world's malnourished children live in developing nations in Asia, Africa, and Latin America, where those affected are primarily from low-income families (UNICEF, 2004), especially those residing in rural areas and urban slums. When income decreases, the quality and

quantity of food also decrease, leading to weight loss and malnutrition. Evidence shows that when unemployment and low wages are present, families opt for cheaper, less nutritious food, exacerbating the problem (UNICEF, 2009). The scourge of under-five malnutrition is increasing globally and in Nigeria, with attendant child mortality rates posing a significant challenge to our society. This highlights the need to investigate the socio-cultural factors influencing the nutritional status of under-five children, particularly in rural communities, to develop targeted interventions to address this critical issue.

Studies have pointed out that malnutrition is high in communities with low-income group, (Ene-Obong, 2007; Maziya-Dixon., 2011). They are of the opinion that this low-income group has heavy workload, poor education and poor nutrient intake. And even the traditional breast-feeding practices that supposed to be exclusively practiced have been substituted with food complements. However, the problem of adequate complementary food is still enormous. Fermented cereal gruel-pap (ogi/akamu) continues to be the preferred complementary for infants in this study area. This has been shown to be inadequate in term of nutrient density. It is bulky, viscose, and low in nutrients, (Ene-Obong, 2007). Many researchers have attributed the above cases to social or cultural affiliations. Akure North Local Government is more of the low-income group, it's assumed that the above scenario may be applicable there and likely to contribute to under-five malnutrition. Cultural practices like breastfeeding, food taboos and feeding patterns can affect a child's welfare and nutrition (Noughani, 2010). Therefore, social and cultural factors related to health and nutrition assist in answering some of the practical problems involved in implementing health programs.

Socio-cultural factors influence individuals directly and very likely change the course of conduct that an individual may be compelled to take (Noughani, 2010). A society's customs and ideas have a great impact on the nutritional status of its indigenes. These factors in combination with other factors such as family structure, ignorance, illiteracy and poverty can lead to severe malnutrition in children. It is therefore important to identify and understand factors that put children from rural or farming communities at a greater risk of malnutrition in early childhood compared to their urban counterparts. Therefore, the present study aims to identify the socio-cultural factors influencing nutritional status in children under-five in selected Akure North Local Government, Ondo State.

Objectives of the Study

The main objective of this study was to assess the socio-cultural factors influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State. The following specific objectives are designed to:

1. Determine if unemployment and low wages are the socio-cultural factors influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
2. Examine if cheaper and less nutritious food, is a socio-cultural factor influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
3. Assess if poor education is a socio-cultural factor influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
4. Evaluate if the traditional breast-feeding practices is a socio-cultural factor influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
5. Assess if feeding patterns is a socio-cultural factor influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.

Research Questions

Based on above identified specific objectives, the following questions are raised.

1. Does unemployment and low wages influence the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
2. What is the influence of cheaper and less nutritious food on the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
3. Does poor education influence the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
4. What is the influence of traditional breast-feeding practices on the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.
5. Does feeding patterns influences the nutritional status of under-five children in selected rural communities in Akure North L.G.A, Ondo State.

METHODOLOGY

Design: A cross-sectional descriptive study was used to assess the socio-cultural factors influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A in Ondo State.

Study Setting: This study was conducted in selected communities in Akure North Local Government Area of Ondo State. The Local Government area is located within the central senatorial district of Ondo State, also known as Ondo Central Senatorial District, alongside Akure South, Ifedore, Idanre, Ondo East, and Ondo West Local Government areas. Akure North Local Government area forms a federal constituency alongside Akure South Local Government area, comprising rural/indigenous and urban constituencies. Its headquarters are situated in the town of Iju/Itaogbolu, and it has 12 wards, including Ogbese, Oba Ile, Bolunduro, and Iju. The Local Government is located just a few kilometers from the state capital's city center. The population of Akure North Local Government Council Area is estimated at 131,587, according to Nigeria's 2006 population census. Geographically, the LGA area covers 660 square kilometers. The Local Government area is bounded to the north by Ekiti State, to the east by Owo Local Government Area, to the south by Idanre and Akure South Local Government Areas, and to the west by Ifedore Local Government Area.

Population: The target population is women between the age range of 18- 49 years because these women are still in their reproductive or childbearing ages and are usually the ones who are often saddled with the responsibility of childcare and nurturing which involves feeding the children.

Inclusion criteria: Respondents eligible for inclusion in this study include:

i. Women who are within the age range of 18-49 and are residing within the selected communities in the Local Government
ii. Women who are presently nursing under-five children
iii. Women who are willing to participate in the study

Exclusion criteria: The following will be excluded from the study:

i. Women who are within the age range of 18-49 but are residing in within the selected communities in the Local Government
ii. Women who are not presently nursing under-five children
iii. Women who declined to participate in the study

Sampling Size Determine: The sample size was calculated based on the Kish Leslie (1965) single proportion population formula and yielded N = 377. Also, 10% (37) was added to cater for incompleteness of questionnaire. The total respondents for the survey will now be 414.

Sampling Procedure: A simple random sampling method was used to select 4 villages out of 12 autonomous villages in the local government. The exponential non-discriminative snowball sampling (also known as chain referral) technique was used to select the respondents. Snowball sampling is a non-probability sampling technique that is used by researchers to identify potential subjects in studies where subjects are hard to locate. This method is ideal for this study as the mothers do not have a particular place where they will meet; and each mother will make referrals to two other mothers, thereby ensuring a wider distribution of mothers and children to be covered.

Instrument for Data Collection: Data collection was done by using an unstructured questionnaire having tested the validity and reliability of the instrument. The instrument was designed from literature, taking into consideration the objectives of the study and research questions. The instrument comprised of five (5) sections, Section A covers demographic information of the mothers; Section B was on the Unemployment and low wages as socio-cultural factors influencing the nutritional status. Section C was on the influence of socio-economic status of the family on nutritional status of children. Section D was on the influence of level of maternal education on the nutritional status of children and section E on the religious and cultural practices that influence the nutritional status of children.

A pre-form form developed by the researcher was used to collect information on the anthropometric measurement of the children. The information includes: the age of the child, the birth weight, current weight and height which will be used to ascertain height-for-age (H/A), which indicates the level of stunting, weight for age (W/A), which indicates that level of underweight, and weight-for-height (W/H) which indicates the level of wasting.

Method of Data Analysis: Data were coded, entered and analysed using both descriptive (frequency, percentages) and inferential statistics (Chi-square). Out of the total number of 414 questionnaires administered, 377 were correctly/ fully completed giving a total return rate of 91.1%. The findings of this study are as presented in tables.

RESULTS

Table 1 above presents the frequency distribution of the demographic characteristics of the study participants. Of the 377 participants, none was below 20yrs of age. The majority were between 24 – 29yrs (36.3%) followed by 33.4% who were between 20 – 24yrs, very few 3.2% were above 40yrs. The occupation of the respondents showed that majority 39.5% were businesswomen, followed by 24.1% who were students, 13.2% civil servants, 8.2% housewife, 7.7% health workers, 5.8% farmers and the least 0.5% teachers and 0.8% clergy. The table also showed that the respondents were predominantly secondary school certificate holders (226, 60%) while 27.1% and only 2.7% had no formal education. This study shows that majority of the respondents are between ages 25 to 29 (36.3%), business is their occupation (39.5%) and had tertiary education (27.1%). Majority of the respondents are married (83.6%), catholic by religion (53.3%) with 2 children (32.1%).

Table 1: The frequency distribution of the demographic characteristics N = 377

Variable	Category	N	%
Age group	20 – 24	126	33.4
	25 – 29	137	36.3
	30 – 34	66	17.5
	35 – 39	36	9.5
	40 & more	12	3.2
Occupation	Business	149	39.5
	Student	91	24.1
	Farmers	22	5.8
	Civil servant	50	13.2
	Housewife	31	8.2
	Health worker	29	7.7
	Clergy	3	0.8
	Teachers	2	0.5
Educational level	No formal education	10	2.7
	Primary education	39	10.3
	Secondary education	226	60
	Tertiary education	102	27.1
Marital status	Married	315	83.6
	Single	55	14.6
	Divorced/separated	7	1.9
Religion	Catholic	201	53.3
	Anglican	59	15.6
	Pentecostal	108	28.6
	Jehovah witness	9	2.4
Number of children.	1	109	28.9
	2	121	32.1
	3	8	2.1
	4	41	10.9
	5	10	2.7
	6	11	2.9

Table 2 shows that 32% of respondents strongly agreed that unemployment is socio-cultural factors influencing the nutritional status, 22% agree, while 21% disagree and 23% strongly disagreed. 22% of respondents strongly agreed that Household monthly income is socio-cultural factors influencing the nutritional status, 46% agree, while 23% disagree and 22% strongly disagreed. 33% of respondents strongly agreed that Influence of low Income is a socio-cultural factor influencing the nutritional status, 30% agree, while 17% disagree and 20% strongly disagreed. This study therefore indicate that unemployment and low wages is a socio-cultural factor influencing the nutritional status (62%)

Table 2 Unemployment and low wages as socio -cultural factors influencing the nutritional status Of Under-Five Children. N = 377

ITEMS	SA	A	D	SD
Influence of Unemployment				
Unemployment results in poor result in poor nutrition	174(46.5%)	74(19.6%)	110(29.2%)	18(4.8%)
Employment makes the head of the family to increase feeding allowance	54(14.3%)	101(26.8%)	26(6.9%)	196(52%)
low-income group is assumed to contribute negative social -cultural factors influencing feeding	153 (40.6)	81(21.5%)	101 (26.8)	42(11.1%)
Lack of money makes people to buy low quality foods	104(27.6%)	102(27.1%)	(26.8)	93(24.7%)
	32%	22%	21%	23%
Household Monthly income				
My family income is				
<N20,000 per month	81 (21.5)	153 (40.6)	101 (26.8)	42 (11.1)
N30,000- N40,000	74(19.6%)	174(46.5%)	110(29.2%)	18(4.8%)
≥N40,000	101(26.8%)	196(52%)	54(14.3%)	26(6.9%)
	23%	46%	23%	21%
Influence of low Income				
Poverty is one of the major causes of socio -cultural influence on nutrition	101 (26.8)	153 (40.6)	42 (11.1)	81 (21.5)
Income determines the nutritional and health status of a family	110(29.2%)	174(46.5%)	18(4.8%)	74(19.6%)
Income determines family quality of life	26(6.9%)	54(14.3%)	196(52%)	101(26.8%)
Income influence children's growth and development	264(70.0%)	68 (18.0%)	5 (1.3%)	40(10.6%%)
	33%	30%	17%	20%
TOTAL	29%	33%	20%	21%

Table 3 reveals that respondents have varying opinions on the relationship between food choices and nutritional status. Only 1.9% of respondents strongly agreed that people buy cheap food to cut costs, while 2.7% agreed, 23.3% disagreed, and 72.1% strongly disagreed. However, a significant proportion of respondents (59.1%) agreed that poor wage earners buy cheap food to make ends meet, with 9.8% strongly agreeing, 28.9% disagreeing, and 2.1% strongly disagreeing. Moreover, 72.1% of respondents strongly agreed that cheap food increases healthcare costs for those suffering from nutrition-related illnesses. The findings also showed that 72.1% of respondents agreed that less nutritious food is easy to find and cheaper, while 23.3% disagreed, and 1.9% strongly disagreed. Additionally, 29.2% of respondents strongly agreed that poor living conditions, such as inadequate water supply and sanitation, lead to infections that cause poor nutritional status. Furthermore, 70% of respondents strongly agreed that a family where both parents provide money for feeding has more nourished children, while 18% agreed, 1.3% disagreed, and 10.6% strongly disagreed. In contrast, 23.3% of respondents strongly agreed that a family where only one parent provides money for feeding has more malnourished children, with 72.1% agreeing, 1.9% disagreeing, and 2.7% strongly disagreeing. Overall, this study observes that cheaper and less nutritious food is a significant socio-cultural factor influencing nutritional status, with 70% of respondents agreeing or strongly agreeing with this statement.

Table 3: Cheaper And Less Nutritious Food Is a Socio-Cultural Factor Influencing The Nutritional Status Of Under-Five Children

SN	ITEMS	SA	A	D	SD
1.	People buy cheap food to cut cost	7 (1.9%)	10(2.7%)	88(23.3%)	272 (72.1)
2	Poor wage earners buy cheap food in order to make ends meet	37(9.8%)	223 (59.1%)	109 (28.9%)	8 (2.1%)
3	Cheap food increases health care costs of caring for those suffering from nutrition related illnesses	272 (72.1%)	7 (1.9%)	10(2.7%)	88 (23.3%)
4	Less nutritious food are easy to find and cheaper.	10(2.7%)	272 (72.1%)	88 (23.3)	7 (1.9)
5	Poor living conditions (inadequate water supply, inadequate sanitation) lead to infection which causes poor nutritional status.	110(29.2%)	174(46.5%)	18(4.8%)	74(19.6%)
6	A family where both the mother and father provide money for feeding has more nourished children	264(70.0%)	68 (18.0%)	5 (1.3%)	40(10.6%)
7	A family where either the mother and father provide money for feeding has more malnourished children	88 (23.3)	272 (72.1)	7 (1.9)	10(2.7)
	TOTAL	**30%**	**40%**	**12%**	**19%**

Table 4 highlights the significance of maternal education in determining the nutritional status of under-five children. The findings indicate that inadequate maternal education results in poor nutritional status (x=3.14), while education is not a factor in good nutritional status (x=3.08). However, parents' education plays a crucial role in infant and child health or death (X=3.11). Furthermore, the study reveals that a mother's level of education contributes positively to the growth and development of pregnancy (X= 2.93). Conversely, lack of education limits women's knowledge about nutrition (X= 3.18). Additionally, parental education has been considered a determinant of a child's later character, as well as later growth and health (X= 3.07). The study also emphasizes the importance of good nutrition education in ensuring healthier children, who grow into more productive adults (X=3.18). Moreover, good health education assists young children, pregnant women, and lactating mothers in achieving their special nutritional needs (X=3.16). On the other hand, lack of education leads to poor nutrition, which in turn leads to malnutrition (X=3.19).

Table 4 : Poor Education as Socio-Cultural Factors Influencing the Nutritional Status Of Under-Five Children

SN	Variable	Mean	SD
1	Inadequate maternal education results in poor nutritional status	3.14	0.860
2	Education is not a factor in good nutritional status	3.08	0.906
3	Parents' education plays a key role in infant and child health or death.	3.11	0.862
4	A mother's level of education contributes positively to the growth and development of pregnancy	2.93	0.961
5	Lack of education limits women's knowledge about nutrition.	3.18	0.814
6	Parental education has been considered a determinant of child's later character as much as later growth and health.	*3.07*	*0.90*
7	Good nutrition education ensures healthier children, who grow into more productive adults	3.18	0.814
8	Good health education assists young children, pregnant women and lactating mothers to achieve their special nutritional needs	3.16	0.817
9	Lack of education leads to poor nutrition on the other hand leads to malnutrition.	3.19	0.807
		3.19	

Table 5 presents the respondents' views on traditional breastfeeding practices and their impact on nutritional status. Only 4.8% of respondents strongly agreed that early breastfeeding is a determinant of later character, growth, and health, while 19.6% agreed, 22% disagreed, and 46.4% strongly disagreed. Regarding traditional breastfeeding practices, 11.1% of respondents strongly agreed that they should be exclusively practiced, 21.5% agreed, 26.8% disagreed, and 40.6% strongly disagreed. However, 56% of respondents strongly agreed that traditional breastfeeding practices have been substituted with food complements, 26.8% agreed, 6.9% disagreed, and 14.3% strongly disagreed. The study also found that 70% of respondents strongly agreed that the problem of inadequate complementary food is enormous, 18% agreed, 1.3% disagreed, and 10.6% strongly disagreed. Fermented cereal gruel-pap (ogi/akamu) was identified as the preferred complementary food for infants by 21.8% of respondents, with 29.7% agreeing, 33.2% disagreeing, and 15.4% strongly disagreeing. Moreover, 71.9% of respondents strongly agreed that fermented cereal gruel-pap (ogi/akamu) is bulky, viscose, and low in nutrients, 17.2% agreed, 1.9% disagreed, and 9% strongly disagreed. Other traditional breastfeeding practices, such as stopping breastfeeding once pregnancy is detected, were also explored.

Table 5 Traditional Breast Feeding Practices Is A Socio -Cultural Factors Influencing The Nutritional Status Of Under-Five Children

SN	ITEMS	SA	A	D	SD
	Early breast feeding is considered a determinant of later character as much as later growth and health.	18 (4.8)	74 (19.6)	110(22)	175(46.4)
2	Traditional breast feeding practices is supposed to be exclusively practiced.	42 (11.1)	81 (21.5)	101 (26.8)	153 (40.6)
3	Traditional breast-feeding practices is been substituted with food complements.	196 (52)	101 (26.8)	26 (6.9)	54(14.3)
4	The problem of inadequate complementary food is enormous.	264 (70.0)	68 (18.0)	5 (1.3)	40(10.6)
5	Fermented cereal gruel-pap (ogi/akamu) is the preferred complementary for infants.	82 (21.8)	112 (29.7)	125 (33.2)	58(15.4)
6	Fermented cereal gruel-pap (ogi/akamu) has shown to be to be inadequate in term of nutrient density.	93 (24.7)	102 (27.1)	78 (20.7)	104 (27.6)
7	Fermented cereal gruel-pap (ogi/akamu) is bulky, viscose, and low in nutrients	271 (71.9)	65 (17.2)	7 (1.9)	34(9.0)
8	Stopping breast feeding once pregnancy is detected	81 (21.5)	101 (26.8)	153 (40.6)	18 (4.8)
9	Mothers transmit pain to the child through breast milk	101 (26.8)	26 (6.9)	54(14.3)	196 (52)
10	The first breast milk is dirty and should not be given to the baby.	40(10.6)	264 (70.0)	68 (18.0)	5 (1.3)
		32%	**26.4%**	**18.6%**	**22.2%**

Table 6 highlights the various feeding patterns that influence the nutritional status of under-five children. The study notes that babies eat 6 to 8 times a day (X=2.68), with meals starting at 30 to 60 mls and gradually increasing (X= 3.03). Additionally, feeding babies when they seem hungry (X=2.78) is also a common feeding pattern. The study also observes that ensuring adequate milk flow and production (X= 3.02), exclusive breastfeeding for six months (X= 2.9) and feeding babies on demand (X= 2.82) are essential feeding patterns. Furthermore, feeding infants 2 to 3 meals per day with 1 to 2 additional snacks (X= 3.11) and using various methods of feeding, such as cup feeding, spoon feeding, finger feeding, and bottle feeding (X= 2.82), are also important. The study also emphasizes the importance of introducing food in a play-based approach (X=3.07), feeding toddlers every 2 to 3 hours (X=3.08), and feeding children well to fuel growth (X= 3.15). These feeding patterns are crucial in ensuring the optimal nutritional status of under-five children.

Table 6: Feeding Patterns Is A Socio -Cultural Factors Influencing The Nutritional Status Of Under-Five Children

		Mean	SD
1	Babies eat 6 to 8 times a day	2.68	1.014
2	Babies' meal starts with 30 to 60 mls then gradually increased	3.03	0.969
3	Feed babies when they seem to be hungry	2.78	*0.986*
4	Ensure adequate milk flow and production	3.02	0.925
5	Six months of exclusive breast feeding for six months	2.94	*0.918*
6	Feed baby on demand	2.82	0.930
7	Feed infants 2 to 3 meals per day with 1 to 2 additional snacks	3.11	0.895
8	Methods of feeding include cup feeding, spoon feeding finger feeding and bottle feeding	2.82	0.978
9	Use play based approach in introducing food	3.07	0.916
10	Toddlers meals should be every 2 to 3hrs	3.08	0.902
11	Feed children well to fuel growth	3.15	0.868
		2.95	

DISCUSSION OF FINDINGS

This study has assessed the socio-cultural factors influencing the nutritional status of under-five children in selected rural communities in Akure North L.G.A in Ondo State. The study reveals that the majority of respondents are between 25 to 29 years old, primarily engaged in business, and have limited tertiary education. Most respondents are married, Catholic, and have at least two children.

The study indicates that unemployment and low wages are significant socio-cultural factors influencing nutritional status. This finding aligns with previous research by Lucas and Gilles (2010) in a rural community in Bangladesh, which identified poverty as the primary determinant of energy and nutrient intake. UNICEF (2009) also supports this finding, highlighting unemployment as a major factor influencing nutritional status.

Furthermore, the study observes that cheaper and less nutritious food is a socio-cultural factor influencing nutritional status. This finding is consistent with UNICEF's (2004) assertion that malnutrition is a consequence of purchasing cheaper and substandard food, particularly in developing nations where low-income families are disproportionately affected. UNICEF (2009) also notes that unemployment and low wages lead families to consume cheaper, less nutritious food, resulting in weight loss and malnutrition. Previous studies by Ene-Obong (2007) and Maziya-Dixon (2011) have also highlighted the prevalence of malnutrition in low-income communities. It can be deduced from this finding that the respondents' preference for cheaper and less nutritious food, leading to poor nutritional status, is likely linked to the fact that many rural dwellers in Ondo State, Nigeria live below the poverty line. This underscores the need for targeted interventions to address the socio-cultural factors influencing nutritional status in these communities.

This study indicates that poor education is a significant socio-cultural factor influencing the nutritional status of under-five children. This finding aligns with Noughani's (2010) assertion that illiteracy and ignorance of food combinations for children are major factors influencing nutritional status.

Furthermore, this study finds that traditional breastfeeding practices are a socio-cultural factor influencing the nutritional status of under-five children. Additionally, feeding patterns were also observed to be a socio-cultural factor influencing nutritional status ($X = 2.95$). This finding is consistent with Oyira et al.'s (2010) report, which notes that despite the importance of child nutrition in infant and child health, many women and lactating mothers in developing countries adhere to traditional breastfeeding practices, and relatively little is done to address the special nutritional needs of children. This study's findings highlight the significance of socio-cultural factors in shaping nutritional outcomes for under-five children. The persistence of traditional breastfeeding practices and feeding patterns, despite their limitations, underscores the need for targeted interventions to promote optimal nutrition and health outcomes for young children in these communities. By addressing these socio-cultural factors, we can work towards improving the nutritional status and overall well-being of under-five children.

Implication of the findings for Community/Public Health Nursing Practice

Malnutrition is a major childhood killer disease and is responsible for over 60 percent of avoidable maternal and infant mortality. Therefore, the socio-cultural factors influencing nutritional status like family structure, socio-economic status, religious, cultural practices and maternal education should be addressed by the Public Health Nurses through community health outreach programmes in order to educate and encourage the mothers on the adequate and affordable ways of meeting the nutritional needs of their children.

CONCLUSION

Based on the findings of this study, the following conclusions have been made.

1. Family structure has a great influence on nutritional status of children. The study reveals that separation of children from their mothers, neglect caused by divorce, leaving the care of children to older siblings, large families, and single-parent families all have a negative impact on the nutritional status of children.

2. Religious and cultural practices also play a crucial role in shaping the nutritional status of children. The study found that certain beliefs and practices, such as the notion that mothers transmit pain to their children through breast milk, discarding colostrum, eating less during pregnancy to prevent birth complications, and denying children foods like eggs, meat, and fish, are deeply ingrained among mothers. Unfortunately, these practices can have a detrimental impact on the nutritional status of children, highlighting the need for education and awareness programs to promote evidence-based practices.

3. Maternal education has a strong influence on the nutritional status of children. The study reveals that educated mothers have fewer malnourished children compared to uneducated ones. This underscores the importance of education in empowering mothers to make informed decisions about their children's nutrition and health, and highlights the need for programs that promote maternal education and literacy

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made. Firstly, community health nurses should educate mothers on the factors that lead to poor nutritional status, emphasizing the importance of exclusive breastfeeding and the use of locally available, highly nutritious food resources as weaning diets. This education should be provided during the ante-natal period and through community outreach programs. Additionally, women empowerment should be encouraged, as it has the potential to improve family finances, food security, and childhood nutrition. By empowering women, we can promote better health outcomes for children and families as a whole. Furthermore, the government should be involved in efforts to improve the socio-economic level of mothers through the provision of employment opportunities, adequate water supply, affordable health facilities, and other social amenities. By addressing the root causes of poverty and malnutrition, we can work towards creating a healthier and more sustainable future for under-five children and their families.

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