OPEN ACCESS

International Journal of Nursing and Midwifery

July-September 2019
ISSN 2141-2456
DOI: 10.5897/IJNM
www.academicjournals.org

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Vol. 11(7), pp. 61-67, July-September 2019
DOI: 10.5897/IJNM2019.0374
Article Number: 14C3E1C61584
ISSN: 2141-2456
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International Journal of Nursing and Midwifery

Review

Building a strong and sustainable health care system in Nigeria: The role of the nurse

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Received 21 May, 2019; Accepted 16 July, 2019

Nigeria is a country that has stood tall in Africa and features prominently in global affairs, yet her healthcare system has suffered several down-falls. Despite her position as a country with huge human and natural resources, her health facilities are grossly inadequate, especially in rural communities and this robs her citizen of optimum health care. Good health is one of the fundamental human rights and the onus rests on the healthcare system to provide health services for health care consumers. A healthcare system is an organization of people, institutions, and resources that deliver health care services to meet the health needs of target populations. Such a healthcare system must have a good health services, a well-performing health workforce, and well-functioning health information system that ensures equitable access to essential medical products, vaccines and technologies, a good health financing system and good leadership and governance for quality, efficiency, acceptability, and equity. Available evidence posits that the Nigerian healthcare system has failed in all these indices. Nevertheless, nurses by virtue of their education, expertise, numerical strength and position as the first point of contact with patients, are well positioned to champion health care transformations. These reforms are needed for a strong and sustainable healthcare system. This paper discusses the Nigerian healthcare system and the role of the nurse in building a strong and sustainable health care system in Nigeria.

Key words: Health care system, nurses, strong and sustainable.

INTRODUCTION

Nigeria is a country that has stood tall in Africa and features prominently in global affairs, yet her health care has suffered several down-falls (Welcome, 2011). Despite Nigeria's position as a country with huge human and natural resources, her health care system is greatly underserved, and health facilities are grossly inadequate, especially in rural communities (Welcome, 2011; Health Reform Foundation of Nigeria (HERFON), 2006; Asangansi and Shaguy, 2009). Several efforts and reforms proposed by the Nigerian government to address the wide ranging issues in the health care system are yet to be implemented at all levels of the health care system

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especially at the states and local government area levels (National Health Policy, 2016) and those implemented lack government commitment and support.

There is overwhelming evidence that there is, fragmentation of services, dearth of resources, including drug and supplies, inadequate and decaying infrastructure, lack of coordination on policy implementations, inequity in resource distribution that is skewed towards the favoured few, poor access to care and very deplorable quality of care (National Health conference, 2009). The Nigerian health system can simply be defined as non-functional. Building a functional health system will therefore require strong policies, committed leadership, adequate financing, essential health care supplies including medical products and technologies; service delivery that meets patient health care needs and a formidable human resource for health. Transformation of the entire health care system requires health care human resources (including doctors, nurses, pharmacist, laboratory scientists etc.) positioned centrally as a panacea to achieving a functional health system. The nursing workforce provides an invaluable tool to the achievement of this transformation (World Health Organization, 2010a). This paper aims at examining the Nigerian healthcare system and the role of the nurse in building a strong and sustainable healthcare system.

HEALTH AND HEALTHCARE SYSTEM

Health is defined as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” This definition, no doubt, is bedeviled by concerted criticisms based on the use of the phrase “complete physical, mental, and social well-being.” Health may then be defined as “a state whereby one is not perturbed by physical, spiritual or psychological (mental) illness, or by injury of any kind.” The underlying supposition of this definition is that man is a composite being with two complementing aspects-body and soul-either or both of which may be affected by ill-health. Achieving an optimal level of wellness therefore determines the level of functioning for individuals and achievement of goals. In order that the Nigeria population achieves optimal well-being in all its ramifications, certain health parameters must be achieved. As a matter of fact, we cannot talk meaningfully about health without addressing the health care and health care facilities. What then is health care?

Health care is the maintenance or improvement of health via the prevention, diagnosis and treatment of diseases and injury, and other physical and mental impairment in humans (Oyibocha et al., 2014). Health care resources are those basic equipment, stock of drugs, vaccines, portable water, constant supply of energy (power), medical record tools, ambulances for mobility of patients, solar freezers, availability of qualified health officers and medical personnel, etc., which make it possible for the improvement of the patients’ healthy living. It also includes “hospitals, clinics, dental offices, out-patient surgery centres, birthing centres and nursing homes.” A health care system can then be said to be an organization of people of various professional groups, institutions, and resources that deliver health care services that meet the health needs of the target populations (Frenk, 2010).

BUILDING A STRONG AND SUSTAINABLE HEALTH CARE SYSTEM

In 2007, the WHO identified building a strong and functional healthcare system as a global strategic priority. They argued that this priority was “Everybody’s Business” (World Health Organization, 2007). Six key building blocks were identified as key to achieving a strong health system which are:
Good health services to provide/deliver effective, safe, quality personal and non-personal health interventions to health care consumer at the appropriate time and place with little or no waste of resources.

A well-performing health workforce with competent, sufficient and evenly distributed staff that is responsive, fair and efficient in achieving the best health prognosis, within the limit of available resources and circumstances.
Health information system for reliable data collection, analysis, dissemination and use on health determinants, health system performance evaluation
Equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, that is scientifically sound.Funding for health, in ways that ensure people can assess needed services timely, without undue impoverishment.

Ensuring strategic policy frameworks exist for leadership and governance

Other dimensions for the evaluation of health systems include quality, efficiency, acceptability, and equity. These key strategies have also been described in the United States as "the five C's": Cost, Coverage, Consistency, Complexity, and Chronic Illness (Brody, 2007). What is the state of the Nigerian Health care system in developing these six building blocks for a sustainable health care system?

CURRENT STATE OF NIGERIAN HEALTH CARE SYSTEM

Examining the Nigeria health system, it is obvious that she has fallen below WHO minimum expectations of a strong and sustainable health care system. For instance

Nigeria was ranked 187 out of 190 countries by the World Health Organisation (WHO) (2000). This ranking used five indicators including: level of population health, health inequalities (or disparities) within the population, health system responsiveness, distribution of responsive within the population and the distribution of the health system financial burden. Not surprisingly, Nigeria fared very low on all the indices. The “supposed” giant of Africa had a recently war torn country -Liberia and others like Malawi ranked above her on the quality of health care provided to her citizens. Further assessment by the Legation Prosperity index published in 2017 ranked 149 countries on the level of prosperity rank, based on physical and mental health, health infrastructure and preventive care. The Nigerian health care sector once more ranked 142 out of 149 countries (Legatun Prosperity Index, 2017) This substantiates the earlier report and further portrays the poor state of the Nigerian health care system (Ojewale et al., 2018). According to the 2018 budget, Nigerian healthcare spending is ₦1800 ($5) per head, when the 340 billion health budget is calculated on per capita basis. It is needless to make comparism with other African countries including South African which proposed a health budget of R205.446 billion ($17.1 billion) in 2018 representing $299 per head when compared to its population of 57 million, yet Nigeria is the country with the highest economy (Ojewale et al., 2018).

Nigeria is further besieged with large attrition of health personnel to the western world, leaving the Nigerian populace with terrible low patient to health professional ratio, thereby encouraging quackery and poor health statistics. Nigeria is not alone in this as other African countries share in this menace. WHO reported that maternal mortality rate in Nigeria is 814 per 100000 live birth, Chad, 856, Central African Republic, 882 and Sierra Leone, 1360. However, it is disheartening that war torn countries like Somalia and Democratic Republic of Congo outperformed Nigeria on this indices. Furthermore, while countries such as Botswana and Mauritius have 100 percent births attended by skilled practitioners, Nigeria is again down the pyramid with 35% competing with countries like Eritrea, Ethiopia, South Sudan and Chad in the number of birth attended by skilled practitioners. The statistics gets worse for every 1000 birth in Nigeria, 108 infants (and children) die before the age of five and this is the worst in Africa. Data from WHO world health statistics 2017 further show that 380.8 per 1000 Nigerians are at risk of malaria constituting about 72 million Nigerians, whereas for other countries, malaria ceases to be a health concern. With the recent insurgency in the north east of the country, this statistics is bound to increase (WHO, 2000).

Nigeria has about 2500 hospitals which are not only poorly funded but inappropriately staffed (Ojewale et al., 2018). This comes into an average of 7920 Nigerians to one hospital, and an average ratio of one doctor to 1:3000, while nurse per head is 1:2000. This calls for urgent actions. Available evidences suggest that the government and key stakeholders are merely paying lip service to the problems of the health care sector (Health Reform Foundation of Nigeria (HERFON), (2006); Oyibocha et al., 2014; Ojewale et al., 2018). With such a poor health care system, life expectancy in Nigeria is 52 years for men and 54 years for women, one of the lowest globally; this is obviously the result of patients dying from diseases in Nigeria that could have been treated in other parts of the world. With these entire situations of healthcare system in Nigeria there is need for her stakeholders and other individuals to proffer a lasting solution. Oyibocha et al. (2014) suggest that building a strong and resilient health care system will require:

i). Creating structure for a system with equitable distribution of health facilities, resources (human and material) and services to all especially the vulnerable populations.
ii). Implementation of cost-effective interventions for basic health and referral services.
iii). Ensuring provision and equitable distribution of agreed essential packages of care‖ at all levels of the healthcare system.
iv). Ensuring monitoring and evaluation systems that track changes and progress in all levels of the health sector at with periodic review of quality assurance.
v). Strengthening progressive leadership in healthcare system.
vi). Reducing attrition of healthcare personnel at different levels, by improving salary structures and offering career progression opportunities and
viii). Creating an environment that is conducive for the advancement of science and research in Nigeria whilst adhering to highest ethical and scientific standards.

Nurses been one of the major stakeholders has a big role to play in salvaging the Nigerian health care system and building a strong and functional health care system.

WHY SHOULD NURSES ENGAGE IN BUILDING A STRONG AND SUSTAINABLE HEALTH SYSTEM?

Nurses by virtue of her education, expertise, the respect earned, their numerical strength and their position as the first point of contact with patients are well positioned to champion transformation for a functional health care. Nurses function from initiation of care to evaluation of care outcome and are the only professionals with undisputed presence in the three levels of care in the Nigerian health system. Nurses today are better equipped to supplement direct medical services with other important components of comprehensive patient care such as patient education, and view patients holistically (Butler and Diaz, 2017).

Also most nurses on daily basis see examples of inequity in health care system and are beneficiaries to the ills thereof; it is evident that nurses have a significant role to play in contributing to building strong, effective and functional healthcare systems. Furthermore, the ICN Code of Ethics for Nurses clearly states nurses' responsibility for initiating and supporting action to meet the health and social needs of the public, in particular those of vulnerable populations (International Council of Nurses, 2012a). The role of the nurse as an advocate for equity and social justice appears in the guidance of many National Nursing Associations and there are also examples of health professionals working together to have greater influence on policy makers to improve opportunities in building a functional health care system (Allen, 2013).

THE ROLE OF THE NURSE IN BUILDING A STRONG AND SUSTAINABLE HEALTHCARE SYSTEM IN NIGERIA

According to Shamian et al., (2015) nurses can make an essential contribution to the building of a strong and sustainable healthcare system in the following ways:

(i) Leading and supporting inter-professional education and inter-professional collaborative practice

Inter-professional collaboration is an innovative solution to health systems' strengthening. It prepares health workers for inter professional collaboration and is an essential precursor to collaborative practice. Inter professional collaborative practices create a strong and flexible health workforce with health professionals sharing best practices in the face of opportunities and challenges. Collaborative practice represents an opportunity for nurses to maximize their skills and practices at their highest capacity (Sullivan et al., 2015). Nigerian nurses should advocate for inter-professional education to be included in core curricula for the training of nurses and as a part of health worker training programs such as in-services training. In all of the settings in which they work, nurse leaders have an important role in advancing inter-professional collaboration and ensuring that it is supported by appropriate governance, policies, environments and delivery models (International Council of Nurses, 2008).

Advocate for a paradigm and operational shift in health care that balances illness focused care with population health

Global agendas and plans "require a recognition that we need to be in the business of health and not in the business of illness" (World Health Organization, 2010b). There is an increasing demand for a paradigm shift from curative care to preventive care. Nurses can advocate for a population health approach in their practice. This approach incorporates community-based wellness strategies and acknowledges the determinants of health of populations. There is need for grass root preventive nursing, which emphasizes teaching people in the communities' health promotive and preventive practices and lifestyle. Encouraging families to adopt healthy practices that prevent and limit illnesses will enhance quality of life and ensure attainment of universal health coverage.

Identifying and championing global and national strategies to address health workforce mal-distribution and migration

Identifying global health needs and importantly, modifiable risk factors associated with communities and developing strategies to combat mal distribution of appropriate health manpower is pertinent for building a strong and sustainable health system. These strategies should be evidence-based and tailored to the local needs of the region/community. For example Nursing and midwifery council of Nigeria (NMCN) should aim at addressing regulation for nursing education, skill mix, working conditions and environments, continuous professional development, and career structures and aim at distributing this competent health work force to areas of dire need. National nurses associations such as national association of Nigerian Nurses and Midwives (NANNM) can cooperate with decision-making bodies, governmental and nongovernmental organisation to achieve appropriate human resources planning, ethical recruitment strategies, and sound national policies on the immigration and emigration of nurses because a strong and sustainable health care system is dependent on an adequate workforce. Locally, there is need for adequate and proper placement of qualified health man power in the primary health care facilities to checkmate the treatment ills perpetuated by unskilled practitioners.

Strengthening and diversifying primary health care

A functional primary health care (PHC) creates resilience, efficiency and equity in health systems. Strengthening PHC requires international, national, educational, institutional, regulatory and individual support. There are many ways in which nurses can take action to build, support and sustain the nurse's role in PHC. Examples of nursing contribution include advocating for legislation and policy that allows nurses to practice to their full capacity in the PHC system, participating in PHC research, working to influence educational policies to include PHC

concepts and principles as at least basic elements in nursing curriculum, and encouraging communities to lobby for political support for PHC. The current structure that places community health extension workers (CHEWs) who are ill prepared to man the primary health care system across some states in the federation for political reasons need be addressed if the goal of universal health coverage is to be attained. Nurses are better prepared for this role. Available evidences in primary health care facilities where there are no qualified nurses show that patronage in those facilities is low. Despite government funding and low cost of treatment, patients prefer to use private facilities manned by retired qualified nurses. These primary health care facilities are therefore subjected to decay, rot, lack of patronage etc. by ill-informed government policies.

Ensuring a strong nursing voice in all health and social system policy development and planning dialogues

ICN believes that all nurses should contribute to public policy development and planning related to care delivery systems, health care financing, ethics in health care and determinants of health (Benton, 2012). As a group, nurses have a massive potential to build and expand our political capital. However, the key to achieving this potential is found in the ability of the individual nurse to recognize and use his or her own voice. Nurses who are unfamiliar with how to engage in policy making can begin by first gaining knowledge of the policy process. A number of examples can be found on how nurses in different parts of the world have worked to coordinate their actions and advocate for public and health care service polices (Patton et al., 2015). Numerous opportunities exist for involvement in policy at the micro level especially policy development related to nursing workforce needs (Newman, 2014). Nursing and Midwifery Council of Nigeria (NMCN), National Association of Nigeria Nurses and Midwives (NANNM) and other nursing professional body in Nigeria should employ a number of strategies to contribute to effective policy development, including monitoring the utilization of nurses in the workforce in terms of work output and remuneration; incorporating new models and management strategies in line with the local need of health care consumers; marketing a positive image of nursing to key management and policy stakeholders nationally and internationally; researching and dissemination of relevant knowledge and findings; and, continually developing and maintaining appropriate networks to enable collaborative working relationships with all other stake holders. Utilizing entrepreneurial skills in nursing is one sure way that will uplift nursing voice in Nigeria.

Considering the influence of regulation and legislation on the health system and Human Resources for Health (HRH) planning issues

Meeting HRH demands requires a qualified and competent nursing workforce that is able to meet the needs of the population. Therefore NMCN regulation should be purposeful, transparent, accountable, ultimate, flexible, efficient; representative and proportionate; and collaboration with stakeholders should be maintained in order to ensure that nurses have sufficient competencies and are practicing to the full extent of their education and training. The existing policies in various teaching hospitals that limit student nurses/midwives from practicing some core nursing procedures should be reevaluated such that task shifting does not affect skill development of the future nurse. There is need to deploy qualified nursing manpower to the hinterlands where health care services are grossly underserved.

Designing and improving information infrastructures and data collection to support health system redesign and planning.

Information is power and developing information infrastructures involves collection of relevant data about the size, skill-mix, license type, demographics, distribution and education of the nursing workforce. This nursing workforce data are required to make informed decisions related to health system redesign and planning. Recently in 2017, the nursing and midwifery council collated electronic data of all nursing practitioners. This is a step in the right direction as it will encourage planning and service delivery if utilised to redesign health care delivery.

Participating in research related to HRH and in health systems research and evaluation

In order to create and synthesize the best evidence, there is need for research. Nursing research will play an important role in HRH planning and development and in addressing health system and policy questions required for health systems strengthening. Health systems research builds evidence-based knowledge for use at policy and planning, program, and operational levels. Evaluation assesses health innovations and outcomes. Within the nursing community, more awareness of the benefits of health systems' research is needed to highlight the importance of nurses' participation in this area. Nurses collect rich data on patient's reactions and disease outcome which do not go beyond the desk for lack of institutional support. It is imperative to encourage nurses through research grants by both national and international nursing organization for active participation

in qualitative research to ensure visibility of the nursing workforce especially as it concerns patients' reactions to indigenous diseases.

Considering the influence of complex, ubiquitous social and gender issues such as the determinants of health, and inequality and inequity

HRH research indicates that systemic gender imbalances pose a major challenge for the health workforce (Patton et al., 2015). Nursing being a female dominated profession is therefore froth with the challenges of overcoming female subordinations especially at the policy level. Women must participate in decision-making and policy-setting and have a lead role in setting the health agenda. Nurse educators and managers are encouraged to promote gender equality in their settings. Anticipating health care workers' lifecycle needs and recognising that sociocultural factors call for vigilance, can assure equality of opportunities and non-discrimination (Newman, 2014). Opening up more opportunities for males to specialise in every specialty in nursing including midwifery need to be strengthened at all levels of training.

CONCLUSION

Good healthcare system is vital in any country, not only for the purpose of maintaining a healthy populace, but also as a matter of national security. A healthy country is a wealthy country, with a thriving human resource; the country can invest in them to move the nation to greater heights. Saying that the Nigerian health sector is in shambles is tantamount to saying the sky is up above. It is pertinent that something must be done by all stakeholders including nursing profession to build a functional health care system that will be the pride of every Nigerian. Nigerian Nurses as individual, association such as NANNM and the regulating body (NMCN) must rise up to the challenge of promoting and supporting all efforts to improve the preparation of nurses for managerial roles, leadership and policy development. This preparation should be broad and must include the development of knowledge and skills for influencing change, engaging in the political process, social marketing, forming coalitions, working with the media and other means of exerting influence. Professional nursing organisations' need to employ a number of strategies to contribute to effective policy development, including monitoring the utilisation of nurses in the workforce; incorporating new models and management strategies; continually marketing a positive image of nursing to key management and policy stakeholders nationally and internationally; disseminating relevant knowledge and research; and, continually developing and maintaining appropriate networks to enable collaborative working relationships with governmental and nongovernmental organizations. These will no doubt contribute greatly in building a strong, and sustainable health care system in Nigeria.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Vol. 11(7), pp. 68-74, July-September 2019
DOI: 10.5897/IJNM2019.0372
Article Number: 89B034F61709
ISSN: 2141-2456
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International Journal of Nursing and Midwifery

Full Length Research Paper

Knowledge and practice of married men towards safe motherhood in Ibadan North Local Government Area, Oyo State, Nigeria

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Received 7 May, 2019; Accepted 26 June, 2019.

Men are the major decision makers in the home; thus, this study was designed to assess the knowledge and practice of married men towards safe motherhood in Ibadan North Local Government Area, Oyo State, Nigeria. A descriptive cross-sectional study was adopted using a multi-stage and proportionate sampling technique to recruit three hundred and ten married men. A semi-structured questionnaire used to solicit information on socio-demographic characteristics, knowledge and practice of safe motherhood among respondents. Knowledge were measured on 35-point and knowledge scores of ≤11, 12-23, ≥24 were rated poor, fair and good respectively. Descriptive statistics and Chi-square test were conducted at 5% level of significance. Respondents' age was 43.7±7.9 years, 85.5% were Yoruba and 54.5% were Muslims, 47.1% of the respondents had secondary education. A good number of the respondents (64.2%) had safe motherhood awareness but the knowledge of safe motherhood was poor (74.8%). About one-third (33.1%) understood safe motherhood as taking care of women throughout pregnancy. The overall mean knowledge score was 8.97±3.48. Level of education and occupation were statistically significant with respondents' knowledge of safe motherhood. There is need to enlighten married men about safe motherhood and involvement in maternal health.

Key words: Married men, safe motherhood, maternal health, safe motherhood knowledge, practice.

INTRODUCTION

The lifetime risk of maternal mortality of women in sub-Saharan Africa is 1 in 39 live births, which is the highest when compared to other world regions (Tilahun et al., 2013). The World Health Organization (WHO) estimated in 2012 that 287,000 maternal deaths occurred in 2010; sub-Sahara Africa (56%) and Southern Asia (29%) accounted for the global burden of maternal deaths (World Health Organization, UNFPA and World Bank, 2012). Most developed countries have made considerable progress in addressing maternal mortality, but it appears

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that countries with high maternal mortality burdens like Nigeria have made little progress in improving maternal health outcomes despite emphasis by the Millennium Development Goals (MDGs) (Okereke et al., 2013). Nigeria accounts for 1 in 6 maternal deaths globally. Approximately 50,000 Nigerian women die each year from largely preventable pregnancy-related complications (Erim et al., 2012). Certain avoidable factors (biomedical, reproductive, health service factors, socioeconomic and cultural factors) increase the risks of severe complications or maternal death (Somé et al., 2013).

A majority of the deaths related to pregnancy and childbirth can be prevented if the women receive adequate and timely medical care at the crucial moments, evidence suggests that providing expectant mothers with adequate maternal care, birth supervision by skilled attendants, and access to emergency obstetric care in pregnancy and delivery can save lives (Oyeyemi and Wynn, 2012). He further stated that complications that can potentially lead to death exist in about 9-15% of pregnancies, 75% of maternal deaths are as a result of direct causes from severe haemorrhage (bleeding), maternal sepsis (infection), obstructed labour, high blood pressure with fits in pregnancy (eclampsia) and unsafe abortion (Oyeyemi and Wynn, 2012).

Most cultures, especially in Africa, regard all issues related to pregnancy or childbirth as a female domain; therefore, men are often not expected to be involved in any health seeking behaviour during pregnancy (Kwambai et al., 2013). Safe motherhood has been conceptualized as a means of ensuring women's accessibility to needed care through antenatal programme in order to facilitate their safety and optimal health throughout pregnancy and childbirth (Igbokwe and Adama, 2011). Safe motherhood is a means of saving the lives of women and improving the health of millions of others (Jatau, 2014).

In a study conducted in rural Tanzania, involvement men in antenatal care service are identified as important in maternal health. Maternal mortality has decreased worldwide in the last ten years; however, in the Sub-Saharan countries it is still high. The World Health Organization (WHO) estimates that, currently, 287,000 women a year die of preventable complications related to pregnancy and childbirth; the majority of these (99%) occur in developing countries and, out of those, 51% occur in the Sub-Saharan region (August et al., 2015).

Safe motherhood is aimed at preventing maternal and prenatal mortality and morbidity. It also enhances the quality and safety of women's life through the adaptation of combination of health and non-health strategies (Jatau, 2014). The importance of safe motherhood to the overall development of a country or a nation cannot be over-emphasized and it has to be acknowledged at the highest levels. Therefore, this study is aimed at assessing the knowledge, attitude and perception of married men on issues related to safe motherhood and by implication, this will help in understanding men's disposition and serve as a guide in designing targeted programs and in the long run contributing to the reduction of the country's maternal mortality and the realization of MDGs-5. The broad objective of this study is to investigate the knowledge, attitude and perception of married men towards Safe Motherhood Initiatives in Ibadan North Local Government Area of Oyo state, Nigeria.

MATERIALS AND METHODS

The study was a cross-sectional descriptive study. The study accessed the knowledge, attitude and perception of married men towards safe motherhood. The study was carried out in Ibadan North Local Government Area, Ibadan North Local Government is situated in Ibadan metropolis which was carved out of the defunct Ibadan Municipal Government by the Federal Military Government of Nigeria on 27th September 1991. The local government is bounded by Akinyele Local Government in the North, in the east, it is bounded by Ibadan North East and Lagelu Local Government, it's bounded by Ido Local Government, Ibadan South West and Ibadan South-East Local Government in the West.

Three hundred and ten married men using a five-stage multi-stage sampling technique to select respondents for the study. A semi-structured interviewer administered questionnaire which comprised open and closed ended questions was used to collect data from respondents. Four research assistants were recruited for the study and were trained a day prior to commencement of data collection to ensure that they have good understanding of the instrument. They were trained on the objectives and importance of the study, sampling process, how to get respondent's informed consent, detailed review of the questions to ensure familiarity and interviewing techniques.

Instrument for data collection

A semi-structured interviewer administered questionnaire which comprised open and closed ended questions was used to collect data from respondents. Related information from literatures guided the development of the research instrument.

Procedure for data collection

Four research assistants were recruited for the study since interviewer administered questionnaire was used for the study. They were trained a day prior to commencement of data collection to ensure that they have good understanding of the instrument. They were trained on the objectives and importance of the study, sampling process, how to get respondent's informed consent, detailed review of the questions to ensure familiarity and interviewing techniques. Data collection commenced on 7th September 2015 and ended 6th October; it lasted for approximately 4 weeks. Approval to interview respondents was gotten from the head of each community after explaining to them the purpose and benefits of the research. Thereafter informed consent was sought from the participants before being recruited into the study and the questionnaires were administered to them in seclusion to give room for privacy. Respondents were selected from every third house, in houses where there were more than one household, balloting was done to select a household where the respondent was picked.

Table 1. Socio-demographic characteristics of respondents (N=310).

Socio-demographic characteristics	Frequency	Percentage
Age (grouped) in years		
≤ 34	33	10.6
35-44	142	45.8
45-54	100	32.3
55-64	35	11.3
Mean age 48.6±7.9		
Religion		
Christianity	141	45.5
Islam	169	54.5
Ethnicity		
Yoruba	266	85.8
Igbo	20	6.5
Hausa	18	5.8
Others	6	1.9
Level of Education		
None	9	2.9
Primary	37	11.9
Secondary	146	47.1
Tertiary	118	38.1
Type of marriage		
Monogamy	271	87.4
Polygamy	39	12.6

Ethical consideration

Ethical approval was obtained from the ethical committee of Oyo State Ministry of Health Ethical Review Committee prior to the commencement of the study. At the community level, community leaders granted permission to conduct the study. The respondents gave verbal consent prior to being interviewed. Respondents were assured of confidentiality of information as there was no form of identifier on the questionnaire.

Data management and analysis

All questionnaires were reviewed after completion for accuracy and serial number were written on each for easy identification and recall. Coding guide was then developed to facilitate the entry of the responses into the computer. The responses were then entered into the computer after coding using the SPSS software. Data analysis were carried out using descriptive statistics and inferential at 5.0% level of significant.

RESULTS

The ages of respondent ranged from 25 to 64 years with a mean age of 43.7±7.9 years. Almost half (45.8%) fell between the 35 to 44 years age group. More than half of the respondents (54.5%) were Muslims and majority of the respondents were Yoruba (85.8%). The highest educational qualification of almost half of the respondents (47.1%) was secondary education, (38.1%) acquired tertiary education, 11.9% completed primary education while 2.9% did not acquire any formal education. A greater percentage of the respondents (43.9%) have spent between 10 to 19 years in their marriage (Table 1). On respondents occupation, (35.2%) were traders, (29.3%) were civil servants followed by artisans (23.9%). More than half of the respondents (51.6%) make a joint decision with their wives about where they seek maternity care while (38.4%) of the respondents make the sole decision about where the wife seeks maternity care, (8.7%) of the respondents wives decides where she wants to deliver and family decides for the remaining (1.3%). Majority of the respondents (87.4%) has just one wife while (12.6%) are polygamous with (89.7%) having two wives and 10.3% married to three wives.

Knowledge about safe motherhood

Majority of the respondents 199(64.2%) have heard

Table 2. Respondents' understanding of safe motherhood.

Understanding of safe motherhood	Frequency	Percentage
Taking care of a woman throughout pregnancy	124	33.1
Going to the hospital for ANC/checkups	66	17.6
Less stress for a woman	64	17.1
Good nutrition	42	11.0
Less chores	33	8.8
Others*	46	12.4

Multiple responses included. *Others: Taking prescribed drugs, adequate rest after delivery, exercise, lot of sex, no violence, exclusive breastfeeding, safe delivery, financial assistance, family planning.

Table 3. Respondents' knowledge of safe motherhood practices.

Safe motherhood practices	Frequency	Percentage
Family planning	83	14.6
Ante natal care	149	26.3
Safe and clean delivery	55	9.7
Essential obstetric care	35	6.2
Good Nutrition	108	19.0
Use of medication	49	8.6
Good exercise	30	5.3
Others*	58	10.3

Multiple responses included; *Others includes: Not walking in the sun**, less stress, counselling, i don't know**, post natal care, less chores, monitoring, wellbeing and safe practice in pregnancy, no tight cloth**, adequate rest, avoiding local herbs**, prayer**, scan, regular sex**, shelter**, ** wrong answers.

about safe motherhood. According to the respondents, safe motherhood was understood as taking care of a pregnant woman throughout pregnancy by 33.1% of respondents, going to the hospital for antenatal checkups (17.6%), less stress for a woman (17.1%), good nutrition (11.0%), less chores (8.8%). Other responses (12.4%) include taking prescribed drugs, adequate rest after delivery, exercise, lot of sex, no violence, exclusive breastfeeding, safe delivery, financial assistance, family planning (Table 2). The two highest source of information of the respondents are Media (37.7%), Hospital (21.9%) among others. Concerning safe motherhood practices, (26.3%) mentioned Ante natal care, 19% mentioned nutrition, 4.6% mentioned family planning (Table 3).

Majority of the respondents (91.0%) were sure that their wives take their medications regularly during pregnancy and most of the respondents' wife (96.8%) seeks care in the hospital during pregnancy. Majority (86.1%) of the respondents reported correctly that problems related to pregnancy and childbirth can endanger the life of a woman. On the danger signs in pregnancy, 16.0% of respondents mentioned bleeding, 15.3% said weakness and tiredness, 12.8% mentioned swollen legs and faces, 9.8% mentioned malaria, other responses are represented on the Table 4 while about one-third (61.9%) of respondents affirmed that a woman can die from any of the problems.

On danger signs during labour, 21.9% reported severe bleeding, 10.6% mentioned severe headache, 9.9% said prolonged labour while 16.1% admitted they do not know the danger signs in labour, others are represented on Table 5. Test of associations indicated that there is relationship between respondent's level of education (χ^2=13.35; p-value=0.04) and occupation (χ^2=15.4; p-value=0.000) and knowledge about safe motherhood.

Knowledge of safe motherhood was calculated for each respondent using a 35-point knowledge scale assessing understanding of safe motherhood, knowledge of safe motherhood practices, and knowledge of danger signs in pregnancy and labour, knowledge about whether a woman can die from the pregnancy and labour related dangers. Each correct answer was scored 1 and incorrect answers were scored 0, then each respondent's score was summed up to give the total knowledge score for each respondent. The scores were categorised into poor, fair and good knowledge. A score above 24 was

Table 4. Knowledge of danger signs in pregnancy.

Danger signs in pregnancy	Frequency	Percentage
Bleeding	106	16
Weakness/tiredness	102	15.3
Swollen legs and face	85	12.8
Malaria	65	9.8
Severe headache	55	8.3
Wrong position of baby	46	9.6
Back pain	33	5.0
I don't know**	39	5.9
Hypertension	26	3.9
Preterm labour	18	2.7
Others*	72	10.7

Multiple response included. *Others =malnutrition, loss of appetite**, stomach pain, low PVC, miscarriage, ectopic pregnancy, severe pain/discomfort, dizziness, stillbirth, insomnia, diabetes, hard breathing, prolonged pregnancy, no foetal movement, overweight baby, infection, anaemia; ** Wrong answers.

Table 5. Knowledge of danger signs in labour.

Danger signs in labour	Frequency	Percentage
Severe bleeding	132	29.1
Severe headache	48	10.6
Convulsion	15	3.3
High fever	38	8.4
Loss of consciousness	35	7.7
Obstructed labour	6	1.3
Prolonged labour	50	10.9
Placenta previa	8	1.8
Delayed placenta	8	1.8
Weakness/tiredness	8	1.8
I don't know**	73	16.1
Wrong position of baby	11	2.4
Severe pains**	6	1.3
Others*	22	3.5

*Multiple responses included. Others= pushing when cervix is not fully dilated; low PCV, outburst of fluids, preterm labour, inadequate pelvis, restlessness, high blood pressure, no foetal heartbeat, hard breathing; ** Wrong answers.

categorised as good knowledge score, while a score from 12-23 was categorised as fair and scores below 12 was categorised as poor. Most of the men (74.8%) had poor knowledge of safe motherhood (Table 6).

DISCUSSION

The ages of respondents ranged from 25-64 years, greater number of the study participants were within the range of 35-44 years, those within the 45-54 age bracket were the next most numerous. The mean age of 43.6±7.9 found in this study was observed to slightly vary from an earlier study carried out in Northern Uganda conducted by (Jatau, 2014). The implication of this mean age is that majority of the men are still in their reproductive ages and they are agile enough to participate in safe motherhood. It is therefore necessary to enlighten men of this age group on the importance of participation in safe motherhood.

More than three quarter of the respondents were from the Yoruba ethnic group as revealed from the study, this

Table 6. Knowledge categorisation of the respondents.

Category	Range	Frequency	%
Poor knowledge	1-11	232	74.8
Fair knowledge	12-23	78	25.2

is expected since the study is carried out in Ibadan North, a local government in the South-western part of Nigeria. The proportion of the respondents who practised Islam is higher compared to those who practiced Christianity and traditional religion which was similar to a research conducted in Osogbo (Adelekan et al., 2014) where more than three quarter of the respondents were Muslims. The educational status of men in the community can be considered to be less than average since less than half of them had at least secondary education. Respondent's with secondary education were the highest followed by tertiary education, this can be attributed to the fact that the study was carried out in a community setting where all categories of people can be found. A higher percentage of the respondents were self employed, this is expected since most people in the local government are in the private sector.

Knowledge of the respondents about safe motherhood

Safe motherhood means different things to different people, respondents understood safe motherhood as different things; taking care of pregnant woman throughout pregnancy, going to the hospital for antenatal check-up, less stress and chores during pregnancy, good nutrition. The finding from this study shows that there is poor knowledge of safe motherhood initiative/ practices while some of the respondents understood it as taking prescribed drugs, exercise, adequate rest after delivery and lot of sex. Few of the respondents recognised antenatal care as a safe motherhood practice, fewer said nutrition while even fewer recognized family planning, safe and clean delivery and essential obstetric care as safe motherhood practices. Majority of the respondents agreed that problems related to pregnancy and childbirth can endanger the life of a woman. Despite the high level of awareness, only few of the respondents could identify the danger sign in pregnancy and danger signs during labour.

However, on birth preparedness, few of the respondents were able to identify items needed to put in place before delivery that is, birth kits as cotton wool, gloves, spirit and sanitary pads. This agrees with a study among similar respondents in Tanzania. Respondent's overall mean knowledge score about safe motherhood was 8.97±3.48 out of a 35 point knowledge scale which accessed understanding of safe motherhood, knowledge of safe motherhood practices, knowledge of danger signs in pregnancy and labour and materials needed for birth preparedness (Butawa et al., 2010). This implies a poor knowledge of safe motherhood, however to ensure effective and increased participation, men should possess relevant knowledge of safe motherhood. This finding (high awareness, poor knowledge) is consistent with several similar studies; among men and women of reproductive age in Zaria, Kaduna state (Butawa et al., 2010), Nigeria; among men in Ungogo, a community in Northern Nigeria (Iliyasu et al., 2010); in a study carried out in Osun state among men of reproductive age (Adenike et al., 2013). The respondents' major source of information on safe motherhood is the media, followed by the hospital.

From this study, there is significant relationship between respondent's level of education and knowledge of safe motherhood. This agrees with the findings from the study conducted in Kaduna, Nigeria where more than 50% of men and 43% of women gave answers that fell into the category of “poor” knowledge (Iliyasu et al., 2010). Men’s knowledge was considerably worse than women’s. Respondents with tertiary education showed more knowledge of safe motherhood; this is expected because of the training and exposure in the tertiary institution. Those with secondary and primary education showed lesser knowledge; this could be as a result of school curriculum at that level is been limited to.

Implication for health promotion and education

The findings from this study provide important information on the knowledge, attitude and perception of married men towards safe motherhood initiatives. The study revealed poor knowledge among married men in Ibadan North Local Government which indicates the need to strenghten existing health education programs. Men need to be enlightened on the issue of safe motherhood and the importance inherent in it. The health promotion strategies that could be useful to improve levels of knowledge of married men towards safe motherhood initiatives are through training and public enlightenment.

Conclusion

This study highlights the need for men in Ibadan North Local Government to have more knowledge about safe motherhood and involvement in safe motherhood

practices as their knowledge about the issue has been found to be deficient. It is obvious that a huge knowledge gap exist that needs to be filled in terms of understanding of the concept of safe motherhood, knowledge about safe motherhood practices, knowledge about obstetric danger signs (danger signs during pregnancy and during labour). Married men should be knowledgeable about issues relating to maternal health such as safe motherhood so that they can have a happy and healthy family because when women in the households are incapacitated, the whole household would be affected since women have an enormous impact on their families's welfare.

Recommendations

It was recommended that men should be educated about safe motherhood and the importance of male participation in safe motherhood starting from an early age. There is need for increased media advocacy to promote maternal health and enlighten the public on safe motherhood and the importance of male involvement in safe motherhood.

Limitations

This study faced certain limitations which should be acknowledege. It was difficult to verify some of the information given by the respondents. Their responses may also have been influenced by socio cultural beliefs about role of men in taking care of their wife(ies) and children right from conception stage.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

ACKNOWLEDGEMENT

The authors are grateful to the research assistants and the participants for their support, cooperation and assistance during the conduct of the study.

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Vol. 11(7), pp. 75-86, July-September 2019
DOI: 10.5897/IJNM2019.0379
Article Number: FEE014761905
ISSN: 2141-2456
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International Journal of Nursing and Midwifery

Full Length Research Paper

Knowledge and practice of healthy nutrition among pregnant women attending antenatal clinic at selected private hospitals in Benin City

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Received 4 June, 2019; Accepted 31 July, 2019

The health of a pregnant mother and her nutritional status can influence the health and survival of the growing foetus because of the biological link between her and her child. This study was conducted to assess the knowledge and practice of healthy nutrition among pregnant women attending selected private hospital, Benin City. Descriptive cross-sectional research design was used for the study. Two hundred and twenty two (222) women were selected using convenient sampling technique. Self structured questionnaire served as instrument of the study. Reliability was ensured using test retest and alpha value of 0.87. Data were analyzed using descriptive statistics; hypothess were tested using logistic regression and t-test at 5% level of significance. Result show that 159 (76.8%) of the respondents have good knowledge of healthy nutrition, 28 (13.5%) of the respondents have a fair knowledge of healthy nutrition, while only 20 (9.7%) have poor knowledge of healthy nutrition. Also 82 (39.6%), have a good practice of healthy nutrition, 69 (33.3%) fairly practice healthy nutrition, while 69 (27.1%) poorly practice healthy nutrition. Factors influencing poor practices include ignorance 45(36.6%), forgetfulness 44(35.8%), and husband's attitude 29(23.6%). Majority 79(38.2%) of the respondents avoided certain foods because they don't just like them. logistic regression shows a statistically significant relationship (p=0.000 OR -0.567, 0.002 OR -0.241 and 0.000 OR 0.417) with the tribe, state of origin and educational level of the husband and the practice of healthy nutrition. Health talk should be encouraged on each antenatal day and nurses should put more emphasis on healthy nutrition. Government should provide public awareness for girl child education as illiteracy is a major factor that affects dietary practice during pregnancy and acceptance to practice which will help reduce the rate of intrauterine fetal death, low birth weight (LBW) and maternal mortality

Key words: Knowledge, practice, healthy nutrition, pregnant women.

INTRODUCTION

Pregnancy is considered to be a pleasurable experience for the pregnant women. Evidences have shown that

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adequate intake of nutrition is an important component for individual’s health and well-being, especially during pregnancy. It is well documented that inadequate maternal nutrition results in increased risks of short term consequences such as; Intra Uterine Growth Restriction (IUGR), low birth weight, preterm birth, prenatal and infant mortality and morbidity (Rocco et al., 2005). Moreover, excessive intake of nutrients during pregnancy can lead to some pregnancy complications (such as, preeclampsia and gestational diabetes, macrosomia, distocia and higher prevalence of caesarean section) (Rocco et al., 2005).

Eating well during pregnancy means do more than simply increase how much the mother eats. The mother must also consider what she eats. The ability of mother to provide nutrients and oxygen for her baby is a critical factor for fetal health and its survival. Failure in supplying the adequate amount of nutrients to meet fetal demand can lead to fetal malnutrition. The fetus responds and adapts to under nutrition but by doing so it permanently alters the structure and function of the body (Mitram et al., 2012). Adequate nutritional intake during pregnancy has been recognized as an important factor for healthy pregnancy and desired birth outcomes (Bawadi et al., 2010). It was found that deficiency of nutrients during gestation may cause the fetus to receive suboptimal micro and macro nutrients; causing inadequate intrauterine growth and development, inherited malformations, preterm deliveries, and pregnancy complication. Eating well during pregnancy means do more than simply increase how much the mother eats. The mother must also consider what she eats. The ability of mother to provide nutrients and oxygen for her baby is a critical factor for foetal health and its survival and failure in supplying the adequate amount of nutrients to meet foetal demand can lead to foetal malnutrition (Daba et al., 2013).

Knowledge of healthy nutrition is very important in determining the extent at which individuals will indulge in health behaviour increasing pregnant women's knowledge of nutrition will have a great impact on their health and of the growing fetus. According to Nagi et al. (2016) in India reported that 40.1% of their respondents are aware of healthy nutrition, 45.5% pregnant patients were aware of the meaning of food and the importance of food (balanced (47%), and healthy diet (43.9%), 59.9% had adequate knowledge regarding requirement of food for proper functioning of the body and as well as for fighting infections (67.2%). Tenaw et al. (2018) in Ethiopia revealed that of the 322 pregnant women surveyed, 87(27%), 156(48.4%) and 111(34.5%) of them had knowledge, favourable attitude, and good practices of nutrition during pregnancy, respectively. Positive significant association between educational status of women (AOR=3.047, 95%CI (1.046 to 8.873)), family income (AOR=3.093, 95%CI (1.076 to 8.890)), attitude (AOR = 4.4, 95%CI (2.315 to 8.299)), number of pregnancies (AOR=2.175, 95%CI (1.034 to 4.573)) and nutrition knowledge during pregnancy was found. Similarly, Ehwarieme et al., (2017) in Benin City Edo State reported that 159 (58.5%) of their respondents had good knowledge of nutrition while 113 (41.5%) had poor knowledge about nutrition. Fasola et al, (2018) in Lagos show that excellent knowledge and good attitude towards good nutrition was observed among 61.89 and 86.89%, respectively. Furthermore, Kever et al. (2015) in Iran results showed that knowledge in 33.3% of pregnant women was poor, 64.2% moderate and 2.5% good. The attitude of most people (98.2%) was positive towards proper nutrition during pregnancy. The practice of 70% of people was moderate about nutrition during pregnancy. However, Dana et al. (2018) in Lebanon reveals that fifty-six percent of the studied population was not knowledgeable about maternal nutrition during pregnancy, twenty-five percent had a negative attitude toward antenatal care (ANC) services and nutrition during pregnancy and forty-seven percent of the participants were having bad dietary practices during pregnancy.

Reported attitude to practice of healthy nutrition by Kever et al. (2015) in Bornu State Nigeria, shows that majority of the respondents 63.27% had positive attitude towards dietary intake during pregnancy which was demonstrated by a qualitative and quantitative increase in their dietary intake, as only 36.73% do not increase their dietary intake during pregnancy. Olajide et al. (2018) in Ibadan Nigeria also reported that majority (75%) of the pregnant women had moderate knowledge level concerning dietary practice during pregnancy. They found no significant relationship between participants knowledge regarding dietary intake and dietary practice (p= 0.200). There is no significant relationship between participants level of education and dietary practice (p= 0.077), however, there is significant relationship between monthly income and dietary practice (p= 0.001).
Reasons for poor nutritional practices were related to culture, environment, income and accessibility to food. Also some complication of pregnancy like pica was also seen as a complication. (Kever et al., 2015). Lack of access to adequate diet has been identified as one of the severe problems among poor populations especially in countries where resources are limited and results in various forms of nutritional problems (Ekesa et al., 2011).

Socio-economic factors also have their effect on nutrition; a study among Japanese pregnant women found that individuals with a higher socio economic position were found to consume diets that were considered to be of a higher quality than those with lower socio economic position (Murakami et al., 2009).

According to UNICEF (2013), each year, more than a million women die from causes related to pregnancy and childbirth. Nearly 4 million newborns die within 28 days of birth (UNICEF, 2013). Many of the 200 million women who become pregnant each year, most of them in developing countries, suffer from ongoing nutritional

deficiencies (Latifa et al., 2012), repeated infections (Wu et al., 2004) and the long term cumulative consequences of under nutrition during their own childhood (Mora and Nestel, 2010). Although, researches focused on maternal health are common, there are dearths of empirical study on maternal nutrition during pregnancy especially in Benin City, Edo state. Hence the researchers aim to assess knowledge and practice of healthy nutrition among pregnant women in selected private hospital in Edo state.

Objective of the study

1. To assess the knowledge of pregnant mothers on maternal nutrition;
2. To determine how well they practice healthy nutrition;
3. To identify the factors influencing adequate nutrition during pregnancy.

MATERIALS AND METHODS

Design

A descriptive cross-sectional research design was used.

Setting

The research was carried in St. Philomena hospital and Faith Mediplex both are major private hospitals in Benin City own by faith based organization.

Target population

Target populations are all pregnant women attending antenatal clinic in the selected private hospitals. An average of six monthly attendance show it is 412 (antennal records**)**. The exclusion criteria are pregnant women who did not register in the selected facility pregnant women who at the time of the study are in their last week of their EDD.

Sample size

A sample size of 222 was obtained using Taro Yamane formula.

$$n = \frac{N}{1 + N(d)^2}$$

When n = sample size; N= population size; d = level of precision (assumed to be 0.05 at 95% confidence interval); N = 412. Thus:

$n = 412/1 + 412 (0.05)^2$
n = 412/1 + 412 (0.0025)
n = 412/1 + 1.03
$n = \frac{412}{2.03} = 202$
n = 222

10% attrition rate = 20.2
202 + 20.2 = 222.2

Sampling technique

Convenience sampling technique was used to select the respondents in the study.

Instrument

The instrument used was a self-structured questionnaire which consisted of 4 sections; Section A contains the demographic respondents. Section B contains 10 items questions on maternal nutrition. The knowledge score will be graded using cumulative percentage score as poor (0-30%), fair (31-69%) and good (71-100%). Section C contains 9 items questions on practice of healthy nutrition which will be graded using cumulative percentage score as poor practice (0-30%), fair (31-69%) and good (71-100%). Section D contains factors affecting practice.

Validity and reliability

Validity of instrument was done by experts in nutrition and measurement and evaluation using face and content validity. Reliability of the instrument was ensured using test retest method and alpha value of 0.87 was gotten.

Method of data collection

Data was collected with the help of two (2) research assistants over a period of 4 weeks; two weeks dedicated to each hospital. Data were collected on Mondays, Tuesdays and Thursdays from the period of 9 am to 12 pm in both hospitals.

Data analysis

Data were analyzed using descriptive statistics and multiple logistic regressions.

Ethical consideration

Ethical clearance was given by the management of the selected hospital and informed consent was taken from the respondents.

RESULTS

Demographic data of respondents

Table 1 shows the demographic data of respondents. Majority 71(34.3%) of the respondents are in the age range of 25 to 30 years, while only 12(5.8%) of the respondents are in the age range of 15 to 19 years. Majority 176(85.0%) of the respondents are Christians while the remaining 31(15.0%) are Muslims. 77(37.2%) of the respondents are Bini's, 33(15.9%) of the respondents are Igbo's, 23(11.1%) of the respondents are Yoruba's. Majority, 128(61.8%) of the respondents are indigenes of

Table 1. Demographic data of respondents.

Variable	Attribute (year)	Frequency	Percentage (%)
Age	15 - 19	12	5.8
	20 - 24	53	25.6
	25 - 30	71	34.3
	≥30	71	34.3
Religion	Christian	176	85.0
	Muslim	31	15.0
	Others	0	0.0
Tribe	Benin	77	37.2
	Esan	28	13.5
	Igbo	33	15.9
	Yoruba	23	11.1
	Etsako	14	6.8
	Others	32	15.5
State	Edo	128	61.8
	Delta	29	14.0
	Ondo	14	6.8
	Others	36	17.4
Head of household	Woman	40	20.2
	Man/Husband	158	79.8
Educational level of husband	Illiterate	15	8.2
	Primary	13	7.1
	Secondary	57	31.3
	Tertiary	97	53.3
Educational level of wife	Illiterate	22	11.8
	Primary	25	13.4
	Secondary	53	28.3
	Tertiary	87	46.5
Marital status	Married	179	89.9
	Single	20	10.1
Family type	Polygamy	41	23.6
	Monogamy	130	74.7
	Polyandry	3	1.7
Number of children	0 - 4	139	73.9
	5 - 6	41	21.8
	7 - 10	7	3.7
	10 and above	1	0.5

Edo State. For the educational level of husband, majority of the respondents 97(53.3%) have tertiary education, followed by 57(31.3%) of the respondents who have secondary education, 13(7.1%) of the respondents have

primary education while the remaining 15(8.2%) of the respondent are illiterates. On the educational level of wife, majority of the respondents 87(46.5%) have tertiary education, followed by 53(28.3%) of the respondents who have secondary education, 25(13.4%) of the respondents have primary education while the remaining 22(11.8%) of the respondents are illiterate. 179(89.9%) of the respondents are married while the remaining 20(10.1%) of the respondents are single. On the number of children of respondents, majority 139(73.9%) of the respondents have children within the children number range of 0 to 4, 41(21.8%) of the respondents have children within the children number range of 5 to 6, 7(3.7%) of the respondents have children within the children number range of 7 to 10 while the minority 1(0.5%) of the respondents have children within the children number range of 10 and above.

Knowledge of healthy nutrition among pregnant women

Table 2 shows that 114 (55.1%) of the respondents know the meaning of healthy diet to be adequate consumption of all classes of food, 76(36.7%) said eating good food, 159(76.8%) knows that food pattern changes during pregnancy while 48(23.2%) says they don't know; 172(83.1%) knows about healthy diet during pregnancy, 190(91.8%) agrees that there is need to improve diet during pregnancy, 133(64.3%) knows that maternal nutrition can cause low birth weight and still birth while 74(33.8%) did not know. Similarly 166(80.2%) knows that maternal food intake can affect pregnancy outcome while 41(19.8%) did not know. 188(90.8%) were able to identify the complete food group, while 19(9.2%) were not able to identify them. Also 147(71.0%) know that food containing protein, vitamin, carbohydrate and minerals are very important during pregnancy. Generally 159 (76.8%) of the respondents have good knowledge of healthy nutrition, 28(13.5%) of the respondents have a fair knowledge of healthy nutrition, while only 20 (9.7%) have poor knowledge of healthy nutrition.

Practice of healthy nutrition among pregnant women

Table 3 reveals that 167(80.7%) says that they improve on their diet during the pregnancy; 95(45%) says they eat adequate diet anytime it is available; 58(28%) says they eat adequate diet thrice a day; 26(12.6%) says they eat it twice daily, while 20(9.7%) say it is once daily. Also 135(65.2%) says they eat fruits always, 15(7.2%) weekly, 10(4.8) twice a week and 37(17.9%) occasionally. Furthermore 151(72.9%) said they eat meat and fish always, 20(9.7) twice weekly. Only 82(39.6%) said they don't avoid any food during pregnancy while 125(60.4%) said they avoid some foods during. Among the food they avoid include beans (4.8%), fatty food (4.8%), snail (2.9%) and sweet things (21.7%). Generally 82(39.6%) have good practice of healthy nutrition, 69 (33.3%) fairly practice healthy nutrition, while 69 (27.1%) poorly practice healthy nutrition.

Factors influencing nutrition of pregnant women

Table 4 shows hindrance to respondent's healthy diet during pregnancy. 45(36.6%) of the respondents said ignorance was their hindrance to a healthy diet during pregnancy, 44(35.8%) of the respondents said forgetfulness was their hindrance to a healthy diet during pregnancy, 29(23.6%) of the respondents said their husband's attitude was their hindrance to a healthy diet during pregnancy, and 28(22.8%) of the respondents said poverty was their hindrance to a healthy diet. Majority 79(38.2%) of the respondents avoided certain foods because they don't just like them, 27(13.0%) of the respondents avoided certain food during pregnancy because of their cultural belief, 16(7.7%) of the respondent avoided certain food during pregnancy because they didn't know any better; that is, ignorance, 81(39.1%) of the respondents who avoided certain during pregnancy gave no reason why they avoided these food. For majority, 110(53.1%) of the respondents, the health education they received during antenatal contributed to their diet practice, for this 31(15.0%) of the respondents their good socioeconomic status was what contributed to their diet practice, for this 16(7.7%) of the respondents their environment was what contributed to their diet practice.

General logistic regression showing relationship between socio-demographic characteristics of the respondents and practice of healthy nutrition amongst pregnant women in selected hospitals

Table 5 shows the relationship between socio-demographic characteristics of respondents and the practice of healthy nutrition among pregnant women attending antenatal clinic in selected hospitals in Benin City. The logistic regression shows a statistically significant relationship (p=0.000 OR -0.567, 0.002 OR -0.241 and 0.000 OR 0.417) with the tribe, state of origin and educational level of the husband and the practice of healthy nutrition by respondents attending antenatal clinic in the selected hospitals in Benin City, while other characteristics like age (p=0.221; >0.05), head of household (p=0.947>0.005), educational level of wife (p=0.200; >0.005), family type (p=0.0.067; >0.005) and number of children (p=0.430; >0.005) had no statistically significant relationship with the practice of healthy nutrition among pregnant women attending antenatal clinic in the selected hospitals in Benin City.

Table 2. Knowledge on maternal nutrition.

Parameter	Frequency	Percent
Meaning of nutrient/diet		
\Eating good food	76	36.7
Adequate consumption of all classes of food	114	55.1
Eating plenty food	9	4.3
Eating anything I like	3	1.4
No response	5	2.4
Total	207	100
Does food pattern change during pregnancy		
Yes	159	76.8
No	30	14.5
I don't know	18	8.7
Total	207	100
Do you know about healthy diet during pregnancy		
Yes	172	83.1
No	19	9.2
I don't know	16	7.7
Total	207	100
Do you need to improve diet during pregnancy		
Yes	190	91.8
No	1	0.5
I don't know	16	7.7
Total	207	100
Can maternal nutrition cause low birth weight and still birth		
Yes	133	64.3
No	18	8.7
I don't know	56	27.1
Total	207	100
Do food intake affect pregnancy outcomes		
Yes	166	80.2
No	30	14.5
I don't know	11	5.3
Total	207	100
Food groups		
The following are the complete food group; carbohydrate, vitamin, mineral, protein, vegetable, fat and oil, water		
Yes	188	90.8
No	19	9.2
Total	2017	100
Total	207	100
How did you get to know about it?		
Friends/relatives	41	22.3
Medical personnel's	139	75.5
Media/TV	24	13.0
Billboards/posters	8	4.3
In Church	19	10.3

Table 2. Contd.

Why do you improve diet during pregnancy			
Baby		161	81.3
Stress		12	6.1
Tradition		8	4.0
during delivery		54	27.3
To look good		37	18.7
Which of these foods are most important during pregnancy			
Protein, carbohydrate, vitamins, minerals		147	71.0
Fat and oil, pounded yam		20	9.6
Minerals, vitamin, fats and oil		40	19.3
Total		207	100
Knowledge	**Correlative performance (% score)**	**Frequency**	**Percentage**
Poor	≤30	20	9.7
Fair	31 - 69	28	13.5
Good	≥70	159	76.8
Total		207	100

Table 3. Practice of healthy nutrition among pregnant women.

Parameter	Frequency	Percent
Did you improve your diet during pregnancy		
Yes	167	80.7
No	23	11.1
I don't know	17	8.2
Total	207	100
How many times do you eat adequate diet daily during pregnancy		
Daily	20	9.7
Twice daily	26	12.6
Thrice daily	58	28
Anytime it is available	96	45
No response	10	4.8
Total	207	100
How often do you eat fruits and vegetables		
Always	135	65.2
Weekly	15	7.2
Twice a week	10	4.8
Don't like it	2	1
Occasionally	37	17.9
No response	8	3.9
Total	207	100
How often do you eat meat and fish		
Always	151	72.9
Weekly	17	8.2
Twice weekly	20	9.7
Occasionally	11	5.3
No response	8	3.9
Total	207	100

Table 3. Contd.

Do you avoid some food during pregnancy			
Yes		125	60.4
No		82	39.6
Total		207	100
What food do you avoid?			
None		106	51.2
Beans		10	4.8
Fatty foods		10	4.8
Heavy foods		10	4.8
Garri		6	2.9
Snail		6	2.9
Yam		6	2.9
Rice		4	1.9
Sweet things		4	1.9
Others		45	21.7
Total		207	100
Which of these do you prefer			
Snacking		26	12.6
Cooking to eat		142	68.6
No response		39	18.8
Total		207	100
Which do you do most?			
Snacking		12	5.8
Cooked food		96	46.4
Both		65	31.4
No response		34	16.4
Total		207	100
If yes, why?			
Too tired to cook		18	8.7
Easy access to snacks		24	11.6
Better taste		114	55.1
No response		51	24.6
Total		207	100
Practice	**Correlative performance (% score)**	**Frequency**	**Percentage**
Poor	≤30	56	27.1
Fair	31- 69	69	33.3
Good	≥70	82	39.6
Total		207	100

Relationship between knowledge on maternal nutrition and practice of healthy nutrition amongst pregnant women attending antenatal clinic in selected hospitals

Table 6 shows that there is a statistically significant ($p<0.000$) relationship between the knowledge on maternal nutrition and practice of healthy nutrition among pregnant women attending antenatal clinic in selected hospitals in Benin City.

Difference in the knowledge of healthy nutrition and practice of healthy nutrition among respondents in selected hospitals

Table 7 shows that there is no statistically significant difference ($p=0.951$) in the knowledge of healthy nutrition

Table 4. Factors influencing nutrition of pregnant women.

Parameter	Frequency	Percentage
Hindrance to healthy nutrition		
Poverty	28	22.8
Illiteracy	6	4.9
Husband's attitude	29	23.6
Forgetfulness	44	35.8
Ignorance	45	36.6
Why do you avoid these food during pregnancy		
Cultural belief	27	13
Ignorance	16	7.7
Religion	4	1.9
I don't like them	79	38.2
No response	81	39.1
Total	207	100
What do you think is contributing to your diet practice		
Illiteracy	15	7.2
Good socioeconomic status	31	15
Health education during antenatal	110	53.1
Culture	11	5.3
Environment	16	7.7
No response	24	11.6
Total	207	100

Table 5. General logistic regression showing relationship between socio-demographic characteristics of the respondents and practice of healthy nutrition amongst pregnant women in selected hospitals.

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
	B	Std. error	Beta			Lower bound	Upper bound
(Constant)	1.914	.138		13.898	.000	1.642	2.186
Age	.088	.072	.109	1.229	.221	-.054	.231
Tribe	-.567	.052	-1.081	-10.983	.000	-.668	-.465
State	-.241	.075	-.244	-3.209	.002	-.390	-.093
Head of household	.013	.194	.008	.066	.947	-.369	.395
Educational level of husband	.417	.064	.554	6.529	.000	.291	.544
Educational level of wife	-.094	.073	-.140	-1.288	.200	-.239	.050
Family type	.314	.170	.203	1.846	.067	-.022	.650
Number of children	.100	.126	.057	.791	.430	-.149	.348

Table 6. Relationship between knowledge on maternal nutrition and practice of healthy nutrition amongst pregnant women attending antenatal clinic in selected hospitals.

		Knowledge			Total	χ^2 / p-value
		Poor	Fair	Good		
Practice	Poor	20 (35.7)	28 (50.0)	8 (14.3)	56	
	Fair	0 (0.0)	0 (0.0)	69 (100)	69	168.501 / 0.000
	Good	0 (0.0)	0 (0.0)	82 (100)	82	

Table 7. Difference in the knowledge of healthy nutrition and practice of healthy nutrition among respondents in selected hospitals.

	Hospital	N	Mean	Std. deviation	Std. error mean	F	Sig.
Knowledge	St. Philomena Hospital	104	2.67	0.645	0.063	0.004	0.951
	Faith Mediplex	103	2.67	0.648	0.064		
Practice	St. Philomena Hospital	104	2.13	0.809	0.079	0.010	0.921
	Faith Mediplex	103	2.13	0.813	0.080		

among respondents attending antenatal clinic in selected hospitals in Benin City. Also, there was no statistically significant difference (p=0.921) in the practice of healthy nutrition among respondents attending antenatal clinic in selected hospitals in Benin City. This therefore shows that there is no significant difference in the knowledge of healthy nutrition and practices of healthy nutrition among the respondents in the selected hospitals in Benin City.

DISCUSSION

Findings from the study show that 159(76.8%) of the respondents have good knowledge of healthy nutrition, 28(13.5%) of the respondents have a fair knowledge of healthy nutrition, while only 20 (9.7%) have poor knowledge of healthy nutrition. Majority of the pregnant women revealed that adequate consumption of all classes of food can be used to define healthy nutrition. The level of nutrition in this study was higher than that reported by Ehwarieme et al., (2017) among rural dweller in Ebvwotubu Edo State where 159 (58.5%) of their respondents had good knowledge of nutrition and Nagi et al. (2016) in India who reported that 59.9% had adequate knowledge regarding requirement of food for proper functioning of the body, as well as for fighting infections (67.2%). Finding of Kever et al. (2015), in Iran support the findings of this study as 64.2% of the respondents had good adequate knowledge of nutrition during pregnancy. In contrast to the present study was that of Tenaw et al. (2018) in Ethiopia who reported very low level of knowledge of nutrition during pregnancy (27%) among pregnant women with 156(48.4%) favourable attitude toward health nutrition. This sharp difference could be attributed to the fact that the Ethiopian study was done in the public hospitals as against private hospitals in the present study. Patients patronizing private hospital in Nigeria are mostly educated with high socio-economic status and as reported in this study many of the respondents and their husband had tertiary education. This might have influence the high level of knowledge recorded.

Findings from the study show that 82 (39.6%) have a good practice of healthy nutrition, 69 (33.3%) fairly practice healthy nutrition, while 69 (27.1%) poorly practice healthy nutrition. Supporting the findings of this study is Tenaw (2018) in Ethiopia who reported that 111(34.5%) had good practices of nutrition during pregnancy. Similar finding was also reported by Dana et al. (2018) in Labanon were 25% had a negative attitude toward antenatal care (ANC) services and nutrition during pregnancy and 47% of the participants were having bad dietary practices during pregnancy. However, Kever et al. (2015) in Iran results differs from this study as that attitude of most people (98.2%) was positive towards proper nutrition during pregnancy and the practice of 70% of people was moderate about nutrition during pregnancy. Kever et al. (2015) in Bornu, Nigeria also reported a higher number (63.27%) of the respondents have positive attitude towards practices of health nutrition. Similar finding was reported by Fasola et al. (2018) in Lagos, as excellent knowledge and good attitude towards good nutrition practice was observed among 61.89 and 86.89%, respectively.

Findings from the study showed that cultural beliefs, poor socioeconomic background and attitudes of the husbands were top most on the list of factors that impede good dietary practice of the respondents during pregnancy. These findings were partly in agreement with that of Gibbons et al. (2011) in Canada and Yassin and Lubbad (2010) in Alexandria who asserted that, respondents were not able to take adequate diet in pregnancy because of ethno cultural believe and low-socio economic status of the respondents and their families. However on the contrary was the findings of Musaiger (2006) in his study on Socio-Cultural and Economic Factors Affecting Food Consumption Pattern in the Arab Countries where he discovered that the respondents practiced good dietary intake during pregnancy because of their socio-economic status. This may possibly be owing to the fact that the respondents and their families were financially buoyant, and as such can afford to purchase the food stuff from the market despite the financial cost. Top on the list among the factors that support adequate intake of dietary regimen by the respondents during pregnancy is regular antenatal visit and good socio-economic status. This may be sequel to the fact that the respondents usually attend antenatal clinics and listens to the health education delivered by nurses during their visit.

Findings from that study shows a statistically significant relationship (p< 0.001 OR -0.567, p = 0.002 OR -0.241

and p< 0.001 OR 0.417) with the tribe, state of origin,educational level of the husband and the practice of healthy nutrition by respondents, while other characteristics like age (p=0.221; >0.05), head of household (p=0.947>0.005), educational level of wife (p=0.200;>0.005), family type(p=0.0.067;>0.005) and number of children (p=0.430>0.005) had no statistically significant relationship with the practice of healthy nutrition among pregnant women. However, studies have reported maternal factors like age, marital status, education level, parity, gestation age, acculturation to have influenced the dietary pattern of pregnant women, with women with higher educational status having changes in their diet, as higher education was found to be associated with favorable dietary intake patterns such as a higher intake of protein and other micronutrients such as iron; vitamins A, D, E, and C and folate (Olajide et al., 2018; Murakami et al., 2009; Mejean, 2010)

Tenaw et al. (2018) in Ethiopia also found a positive significant association between educational status of women (AOR=3.047, 95%CI (1.046 to 8.873)), family income (AOR=3.093, 95%CI (1.076 to 8.890)), attitude (AOR=4.4, 95%CI (2.315 to 8.299)), number of pregnancies (AOR=2.175, 95%CI (1.034 to 4.573)) and nutrition knowledge during pregnancy. Whereas knowledge, family income, husband education and occupation had a positive association with good practices of nutrition during pregnancy. As members of health team nurses and doctors are in better position to bring awareness to pregnant women on the importance of healthy eating during pregnancy. Although it is the tradition of nurses and midwives to give health talk to pregnant women attending antenatal clinic but it is very important to put more emphasis on dietary practice during pregnancy.

Conclusion

The findings showed that most of the women attending antenatal clinical in the selected private hospital have good knowledge of healthy nutrition, however the practice was found to be low. It was also discovered that many factors affects the practice of healthy nutrition such as forgetfulness, husband's attitude, illiteracy as well as cultural belief among pregnant women attending the antenatal clinic. Health talk should be encouraged on each antenatal day and nurses should put more emphasis on healthy nutrition. Government should provide public awareness for girl child education as illiteracy is a major factor that affects dietary practice during pregnancy and acceptance to practice which will help reduce the rate of intrauterine fetal death, low birth weight (LBW) and maternal mortality.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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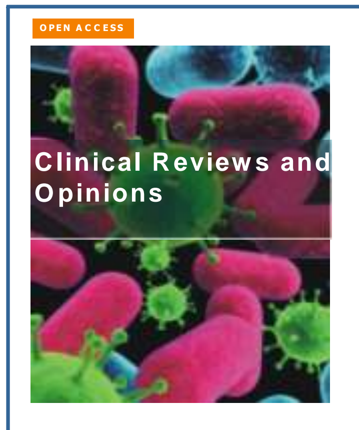

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