



## FORESTALLING MEDICAL ERRORS AMONG THE NIGERIAN NURSING STUDENTS

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**ABSTRACT:** *Various existing literatures on healthcare are of the opinion that 'health is wealth' and that living in good health is the desire of everybody. However, regular occurrences of medical errors in various health facilities have posed a major challenge to the healthcare system in Nigeria. This paper therefore aims at: working towards forestalling medical errors among the upcoming nurses that are presently students, addressing the existing challenges of medical error so that the public will once again repose their confidence in medical personnel and to suggest ways of repositioning the status of nursing profession to its enviable position. The paper employs both primary and secondary sources of data collection. The primary source involves oral interview with people that have experienced medical errors; either directly or indirectly. The secondary source contains prints and internet materials. Findings revealed that medical errors have caused a lot of damages to their victims; takes longer period of treatment, incurs additional cost and psychological trauma to patients. To forestall medical errors among student nurses in Nigeria, the paper recommends recruitment of qualified nurses who will provide mentorship roles to nurses on training; there must be reduction in workload and overtime on both practicing and student nurses while on clinical training; there must be clarification of physician's orders given to both student and registered nurses and nurses themselves must adhere strictly to their Nightingale's Pledge by being alive to their responsibilities. The paper concludes that if the following recommendations are followed, medical errors will be forestalled among the Nigerian student nurses and will be reduced to the barest minimum among the registered nurses.*

**KEYWORDS:** Medical Errors, Forestall, Nursing Students, Medical Personnel, Nursing Profession.

### INTRODUCTION

Nurses, being part of the indispensable members of the health sector in Nigeria, have been contributing to the wellness and health conditions of the Nigerian society. This makes nursing a noble profession as the importance of a nurse in any given society cannot be over-emphasized. Various definitions have been given to Nursing as a profession. Notable among the definitions is the one propounded by Virginia Henderson. She defined nursing as 'assisting individuals to gain independence in relation to the performance of activities contributing to health or its recovery' (Henderson, 1966).

Coupled with the above is another definition that gives detail of what nursing entails. It was given by the International Council of Nurses (ICN). It reads inter alia:



Nursing includes the promotion of health, prevention of illness and the care of the ill, disabled and dying people, advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management and education (ICN, 2002).

In the same vein, Adejumo in her inaugural lecture, while dispelling the erroneous idea that nurses are doctors' assistants, described nurses as 'health professionals in their own right, with specific skills and training that enables them to perform a wider variety of essential roles' (Adejumo, 2018). She added that their roles are of significant importance as they are the gatekeepers in the healthcare delivery of any given society.

### **Medical Errors in Actual Sense**

It is no longer news that medical errors are becoming regular occurrences in our health sector. The menace is not limited to the private health sector but also the government owned ones. Medical errors have been defined in various ways by many writers. In the words of Birgili and Sahin (2019), 'medical error is an adverse and unexpected occurrence involving sudden death, serious physical and psychological injuries or the risk thereof caused by an accidental failure during the health care provided to the patient.' Also, from the perspective of the *World Health Organization* (WHO), medical error is a 'medical intervention of which the intended aim does not occur (WHO, 2002).

In addition, a definition by Ronald (2000), that gives detail of what medical error is says it is 'either a failure of a planned action to be completed as intended or the use of the wrong plan to achieve an aim.' From the above stated definitions, it is clear that before medical error occurs, the healthcare practitioner has outcomes to be achieved at the end of an intervention, which is documented in the case of a nursing intervention, while drawing the nursing care plan. However, the intended aims are not achieved, bringing about medical errors.

### **Cases of Medical Errors in Nigeria**

It is on record that cases of medical errors abound in Nigeria's healthcare facilities such as: hospitals, nursing homes, medical laboratories, pharmacies, physicians' offices, surgery centers and even patients' homes. These cases manifest in various forms among which are: medication errors, surgical errors, laboratory errors, patient falls, pressure ulcers, documentation/computer errors, procedural errors, diagnosis errors, referral errors and therapeutic errors among others.

Among the recorded serious cases of medical errors in Nigeria as reported by Ojerinde (2019) was the case of Chief Gani Fawehinmi. He asserts that the late human rights activist was a victim of diagnosis error in Nigeria. He was earlier diagnosed of pneumonia and was undergoing treatment while in Nigeria but the condition grew worse until he was later diagnosed of cancer after he was flown abroad for treatment.

Similarly, the former director-general of the National Agency for Food Drug Administration and Control (NAFDAC) also suffered from medical error. It was reported in the news that the Late Professor, Dora Akunyili, was also a victim of wrong medical diagnosis. She was diagnosed of a 'growth' in Nigeria and needed surgical intervention but was later diagnosed of a new disease in a hospital in the United States (Ojerinde, 2019). She ended up as a uterine cancer patient and eventually died in an Indian hospital in 2014 (Wikipedia).



Furthermore, medical negligence, which involves rendering of healthcare services below the standard of care by a medical practitioner, have resulted into many preventable medical errors (Oyebode, 2013). Enemo (2013), who applied the *res ipsa loquitur* (*the thing speaks for itself*) doctrine in his work on medical negligence in Nigeria, highlighted various cases of medical errors cited from the existing literatures. Among these errors is the case of a medical personnel who unintentionally left swabs in the body of a patient after an abdominal operation. Another one was a dental extraction that accidentally led into a jaw fracture. Also, a patient, who wanted to get a treatment for his two stiff fingers, ended up with four stiff fingers leading to the loss of the function of the left hand after treatment went wrong.

In addition to the above-mentioned cases in Nigeria, there was a case of medical error in which a young mother suffered from procedural error due to improper episiotomy performed on her by a midwife (Chukwunke, 2015).

### **Medical Errors and Its Causes**

From the various existing literatures on medical errors and personal experience, various factors were identified to be responsible for them in Nigerian health facilities. They occur among all segments of medical practitioners including nurses; both at government and private-owned health facilities.

First and foremost, among the major factors responsible for medical errors in healthcare facilities is occupational stress on medical personnel. Studies have shown that healthcare delivery in general and nursing in particular is a stressful profession due to the nature of the tasks it entails (Najimi, et al, 2012). Also, organizational factors such as: job demands, staffing rate, working hours, work environment and competition among various healthcare organizations among others contribute to the stress experienced by medical operators (Moustaka & Constantinidis, 2010). Consequently, occupational stress has been found to decrease the working efficiency of its victims. Hence, in a situation whereby the responsibility of attending to many patients is on a single nurse due to inadequate staffing by the healthcare organization, medical errors are bound to occur. Little wonder then that Adejumo, in her inaugural lecture, emphasized that medication errors by nurses were the outcome of attending to the needs of a large number of patients (Adejumo,2018).

Coupled with the above on the causes of medical errors among the Nigerian health providers is the lack of the required knowledge and skills to attend to healthcare situations. The healthcare demesne is dynamic, therefore requiring healthcare professionals who are likewise dynamic in thoughts, ideas, innovative and deliver evidence-based health services. For instance, the development of decision-making, confidence, flexibility and analytical skills (Paans, et al, 2017), as well as having adequate knowledge including pharmacological knowledge characterizes a professional and excellent nurse.

It is important to note that these knowledge and skills are acquired by nurses during their clinical practice years. Hence, recruiting a nurse without these cognitive and affective characteristics consequently leads to the infiltration of unqualified personnel into the health sector. This, no doubt, will contribute negatively to healthcare by committing errors when delivering healthcare services.

Another factor that causes medical error among healthcare professionals is the communication gap among members of an interdisciplinary healthcare team. The interdisciplinary team



comprises a set of health service workers both professionals and non-professionals (Nancarrow, 2013). They also include nurse specialists, physicians, advanced practice health providers, pharmacists, dieticians and social workers with the aim to improving the quality of care received by patients.

From the observation of Molyneux (2001), communication within team members is a pointer for positive team work; hence, for an interdisciplinary healthcare team to be effective there must be adequate communication flow between members of the team. The presence of a gap in the communication link tends to cause a breach in the delivery of healthcare services, leading to failure of a planned action to be completed as intended. This amounts to the use of the wrong plan to achieve an aim, hence causing medical error.

Furthermore, on the causes of medical errors in the Nigerian health facilities is the inaccurate assessment of patients by medical personnel in attendance. In any standard hospital, before a patient can be admitted into the ward, there must be a comprehensive assessment by the nursing staff. This being the first component of nursing process which comprises both physical assessment and history taking. It helps the nurse in recognizing the current and future healthcare needs of the patient, hence, the results of a physical assessment cannot be overlooked as it goes a long way in determining the nursing diagnosis in the nursing care plan. Hence, the need for a comprehensive and accurate assessment.

As earlier stated, the importance of an accurate nursing assessment to the determination of the current and future healthcare needs of patients cannot be overemphasized as the case of an inaccurate nursing assessment poses serious danger to the patient. In the instance of future health care needs, a patient after being properly assessed can be diagnosed of a ‘risk for fall’ due to some factors. Inaccurate assessment will hinder the nurse from carrying out preventive measures of falls, thereby leading to medical errors.

Besides, bureaucratic protocol in Nigerian health facilities has resulted into series of medical errors. This bureaucracy often leads to delay in attending to patients even during emergency cases. There are many instances whereby the patients who were victims of road accident and on danger list were expected to bring their hospital cards and police reports before they could be attended to by medical personnel. The effects of this has caused numbers of complications such as: fainting, unconsciousness and death (Adegboyega,2018).

In addition to the above discussed causes of medical errors among medical practitioners is the issue of technical failure of medical equipment also known as armamentarium. This medical equipment is specially designed to function regularly in diagnosing, monitoring and treatment of a disease. The failure of this equipment to function as expected often leads to technical failure with the accompanied disastrous effect on the patient under the care of a nurse or other medical staff. For instance, if there is a technical failure in the Electronic Health Record (EHR) System of a hospital, it will lead to mismanagement of patients, thereby causing medical error.

### **Effects of Medical Errors**

Various interviews conducted in the course of this study and a range of literatures consulted have revealed that the effects of medical errors on patients and their relatives are severe and, in some cases, disastrous. It was also observed that medical error, whether systemic or plain human error, always have adverse effects which can lead to both physical injury and death of



patient. Not only this, a single avoidable mistake can cause ‘financial, psychological and emotional stress to the patient, his or her relatives, healthcare providers and the organization itself’ (Qlicksmart, 2020).

First and foremost, among the effects of medical errors on patients is the extension of length of stay (LOS) in the hospital. The effect of medical error, using the case of ‘fall’ as an example, could result into head injuries and broken bones (CDC, 2017). This might cause complications of the original nursing and medical diagnosis. In this case, the patient has no option than to accept the elongation of his or her stay in the hospital.

Moreover, the extended LOS has proven to have some detrimental effect on the families of the patient. This effect is in manifold: one of them is emotional exhaustion of members of the families of the patient as a result of the psychological and emotional supportive roles played in the hospital treatment of the patient. In addition to this is the disruption of the stability of families’ social system which occurs as a result of a member being admitted into the hospital (Bellou & Gerogianni, 2007). Other includes physical effect which involves existential challenge. For instance, if the admitted patient happens to be the breadwinner of the family, it means the family members will face a hard time that is difficult to cope with. In the same vein, the patient’s workplace will also suffer due to the absence of the appropriate workforce. Thus, extension of LOS as an effect of medical error affects the patient as well as his or her family.

Again, medical errors in some cases have resulted into sudden death of many patients. In spite of various safety measures taken in the hospital, errors occur frequently. The frequency of death as a result of medical error was not taken into cognizance in the years past as patients were believed to have died of their infirmities (Iloh, et al, 2017). However, the report released by the Institute of Medicine on the 1<sup>st</sup> of December, 1999, revealed that an estimate of 44,000 to 98,000 people dies annually in the United States of America as a result of medical errors (Havens & Boroughs, 2000). Likewise, taking into account the data obtained from the Centre for Disease Control and Prevention in the United States, medical errors are the third leading causes of death in USA (Makary & Daniel, 2016). Undoubtedly, the loss of a patient to medical error could have a devastating effect on the families of the patient. The idea that the error could have been prevented makes the effect more devastating.

Moreover, medical errors have ‘cost consequences’ on patients. A publication released on pressure ulcers revealed that approximately 3 million adults are suffering from pressure ulcers in the United States as a result of medical errors (Lyder & Ayello, 2008). Although the dimension of pressure ulcers are not adequately known in developing countries such as Nigeria due to the little information on it and resource constraint, yet the disease is very much with them as it is with the developed countries (WHO, 2008).

Pressure ulcer and its accompanied medical errors have become major concern in health care system because of its negative financial impact on patients and their families. In the observation of Allman (1986) and cited by the World Health Organization (2008), inappropriate treatment of pressure ulcer will result into complications such as osteomyelitis, sepsis, cellulitis and in severe cases, death. Likewise, medical error imposes additional cost that results from long hospital stays, prolonged use of pharmacological items and treatment materials (Silva, et al, 2013).





Furthermore, the occurrence of medical errors betrays the confidence reposed in health workers by the general public. Trust as a concept in the context of the relationship between patients and healthcare workers holds a vital position that cannot be overlooked. Without the trust of a patient in his or her healthcare provider, the action of taking informed consent for the performance of any procedure will end in smoke (Faden, 1986). In this regard, medical error tends to affect negatively the trust of patients in healthcare workers. This effect presents healthcare workers as being ineffective and incapable of delivering their services as expected.

In addition to the above on the effect of medical errors is the avoidance of healthcare facilities by the patients or their relatives. A research from *Betsy Lehman Centre* (BLC) on the financial and human cost of medical error reports that more than 60% of patients and their families were not satisfied with the responses they were getting from their health providers after an error had occurred. (BLC, 2019). As a result of this displeasure with their health providers, people tend to withdraw from utilizing the orthodox healthcare systems in their communities.

### **Ways Towards Forestalling Medical Errors among the Nigerian Nursing Students**

Over the years, medical errors have remained a major challenge to both the private and public health sectors in many countries (Rodziewizz & Hipskind, 2020). This challenge is not only facing healthcare personnel and healthcare system, but also the patients and their families. In fact, it is gradually becoming a permanent feature of health facilities in developing countries including Nigeria. It is therefore important at this juncture to examine ways of forestalling medical errors so as to avoid its reoccurrence among the Nigerian nursing students who will be practicing the profession in the nearest future.

To begin with, obtaining of basic nursing educational requirements by registered nurses which makes them qualified to practice should be taken very seriously. This is very important if we really want to forestall medical errors. A registered nurse must have graduated from a nursing program and met the requirements stated by government-authorized licensing bodies (Wikipedia) such as Nursing and Midwifery Council of Nigeria. Likewise, the characteristics of an excellent nurse which includes being cooperative, introspective, communicative, coordinating and empathic among others as observed by Paans, et.al (2017) should be put into consideration before recruitment.

It is important to note that these criteria are for the benefit of student nurses during their clinical trainings as they would practice and develop mastery of their skills under the watchful eye of qualified nurses (Duquesne University, 2020). Sequel to this, the Nigerian nursing students, who are to take over this profession in years to come must face their studies squarely, maintain a good attendance of clinical trainings and fulfill other requirements of licensing bodies in order to get certified as a registered nurse. This will, no doubt, reduce the menace of medical errors to the barest minimum if not totally eradicated.

In the same vein, the recommendation of the Institute of Medicine (IOM) in its report, that health professional licensing bodies should carry out re-examination and re-licensing of nurses and doctors at regular intervals, must be strictly adhered to if we truly want to improve patients' safety. (IOM, 1999). This approach will, no doubt, wake up the medical personnel and make them to be alive to their responsibilities. Through this, medical errors will be reduced to the barest minimum.



Coupled with the above is the interest that student nurses must have in an aggressive research. Not only does continuous nursing research catalyzes optimal nursing care, but also fosters the forestalling of medical errors (Tingen et al, 2009). Nursing research will help in filling the gaps that exist in knowledge about improving patients' safety. Thus, engaging in scholarly researches for possible publication in scholarly journals should be encouraged among registered nurses and nursing students. This is important as the healthcare services no longer rely on opinion or idea but on confirmed evidence through research (Adejumo, 2020). To achieve this, the allocated period for the research methods in nursing in various schools should not be tampered with and if possible, it should be extended.

Also, the importance of lecturers and supervisors as the major pillars in the academic pursuit of nursing students should be recognized. Nurses under training should follow instructions and guides as directed by the lecturers and supervisors. If instructions are followed, all avoidable errors will not be committed. It must be also noted that research supervisors should not be found wanting in their responsibilities but take up their roles as mentors in guiding students through the journey of carrying out an acceptable research work (Adejumo, 2020).

Moreover, regular attendance of conferences, seminars and symposia by nursing students is another important means of getting rid of medical errors in this contemporary medical dispensation. With regard to this conference attendance, the current registered nurses are not exempted as they all need it as well. This is because all nursing interventions in the contemporary Nigerian society are based and supported by current and valid research evidence. Gone are the days when healthcare are based on trial and errors, expert opinions, etc. (Adejumo, 2020, Stevens, 2013). Consequently, attending conferences will affords nursing students the opportunity of widening their scope and horizon. It will also create the avenue for meeting scholars of different background and orientation.

Besides, to really forestall medical error among nursing students in Nigeria, all healthcare facilities in the country must be adequately staffed by registered nurses. This will reduce the exhaustion that often emanates from having a decrease in nurse staff-patient ratio. A significant increase in the number of healthcare personnel attending to the needs of patients minimizes the occurrence of medical errors. Proper staffing with Registered Nurses (RN) is important for the provision of ideal nursing care (Kim et. al, 2020). Also, adequate staffing will afford the nursing students the opportunity to learn what they need to know under the practicing nurses during their clinical placements.

Furthermore, bridging the gap that might exist in the flow of information among members of an interdisciplinary care team will prevent the occurrence of medical errors. Nancarrow, et.al (2013), highlighted some characteristics that manifest the competencies of an interdisciplinary care team. They stated that an interdisciplinary care team must adopt communication strategies that promote collaboration and delivery of quality care. This emphasizes the fact that patients' information collected by each member of a care team, should be coordinated and properly circulated within the team. This will help to prevent miscarriage of information at all stages of care.

In the same vein, clarification of orders from physicians to nurses should be succinctly done by nurses before been implemented (Smith, 2003). In most Nigerian hospitals, physicians' orders that are to be implemented by nurses are handwritten in patients' charts. In view of this, errors lurk around if the nurse cannot comprehend the orders because of the illegibility



of the handwriting of the physician. An example is the error that is often generated when a physician orders a specific time for the flow of an intravenous fluid but due to the illegibility of the handwriting, the nurse may not be able to appropriately calculate the flow rate of the fluid thereby causing errors. It is therefore important for both registered and student nurses to always clarify orders before implementing as this will go a long way in preventing medical errors. In like manner, rigid and bureaucratic protocol should be relaxed as this will go a long way in reducing the menace of medical error in Nigerian health facilities.

Lastly, studies have shown that if nurses fully incorporate and apply the education and training, they acquired while in school into practice, the healthcare system will be transformed into the better one as there will be an increase in patients' safety, provision of adequate care and reduction of errors (NAS, 2011).

By and large, nurses should stay alive to their responsibilities by attending to the unique needs of patients in their care as stated in the Nurses' Nightingale's Pledge. This will surely go a long way in forestalling medical errors among the practicing nurses and nursing students; both now and in the future.

## CONCLUSION

This paper presented a research response towards medical error – one of the major challenges facing health facilities in the contemporary Nigerian health sector. It is no longer news that medical errors, which are 'medical interventions of which the intended aims do not occur,' are becoming regular occurrences as the general public are becoming skeptical about the competency and reliability of the orthodox health facilities in the country. This is because of its adverse effects on patients, their families and the healthcare system. Various factors such as lack of adequate skills and knowledge in nursing and occupational stress on nurses were discovered to be the causes of this menace. It is therefore the attempt to forestalling medical errors among the Nigerian Nursing Students and finding a lasting solution to the menace that prompted this research response.

The paper recommended ways of forestalling the menace so that the general public could renew their confidence in the orthodox health facilities. Prominent among the ways out are: recruitment of qualified nursing staff into the health facilities, adequate staffing of nurses so as to monitor and train nursing students during their clinical training, development of interest in aggressive research by both registered and student nurses as healthcare these days no longer rely on textbooks and expert opinion but on evidence-based practice. Others include: conference attendance to widen the horizon of student nurses as it will elevate them beyond being bedside nurses, and that nurses must derive pleasure and satisfaction in their profession by being alive to their responsibilities and keep in mind their Nightingale's pledge among others. The study also observed that the rigid protocols that often lead to medical errors should be relaxed. The paper therefore concludes with the opinion that if the above-mentioned recommendations are strictly adhered to, the issue of medical errors will be forestalling among the student nurses and be reduced to the barest minimum among the registered ones.





## REFERENCES

- ADEJUMO, P.O. (2018). 'Riding through Risks into New Frontiers: The Nurse, The Nursed and Nursing.' The 452nd Inaugural Lecture Delivered at The University of Ibadan. Available at [www.ui.edu.ng](http://www.ui.edu.ng). Accessed on 15 March, 2020.
- Adejumo, P.O. (2020). 'Research without Tears: Building the Competencies of the 21<sup>st</sup> Century Nursing Student in Research and Scholarly Endeavour.' A Week-long Research Conference Organized by the Nigeria University Nursing Students' Association, on 11 May, 2020.
- Allman, R. M. (1986). 'Pressure Sores among Hospitalized Patients'. In *Annals of Internal Medicine*. 105: 337-342.
- Bellou, P. & Gerogianni, K.G. (2007). 'The Contribution of Family in the Care of Patients in the Hospital.' In *Health Science Journal*. 1(3):4-9.
- Betsy Lehman Center for Patient Safety. (2019). 'The Financial and Human Cost of Medical Error. A Research Report.
- Birgili, F. & Sahin, M. (2019). 'Determination of Nursing Students' Medical Errors.' In *International Journal of Nursing* (1): 25-32.
- Centers For Disease Control And Prevention.(2017). 'Important Facts about Falls.' Available at [www.cdc.gov](http://www.cdc.gov). Accessed on 21 April, 2020.
- Duquesne University. (2020). 'The Importance of Clinical Experience.' Available at [onlinenursing.duq.edu](http://onlinenursing.duq.edu). Accessed on 23 June, 2020.
- Enemo, I. P. (2011-2012). 'Medical Negligence: Liability of Health Care Providers and Hospitals.' In *The Nigerian Juridical Review*. 10:112-131.
- Faden, R. & Beauchamp, T. A. (1986). 'History and Theory of Informed Consent.' New York: Oxford University Press: 274-280.
- Havens, D. H. & Boroughs, L. (2000). 'To Err is Human: A Report From The Institute of Medicine.' In *Journal of Pediatric Health Care* 14(2): 77-80.
- Henderson, V. (1966). 'The Nature of Nursing: A Definition and its Implication for Practice, Research and Education.' 2<sup>nd</sup> Edition. Michigan: Macmillan.
- ICN. (2002). 'Nursing Definitions'. In *International Council of Nurses' Newsletter*. Available at [www.icn.ch](http://www.icn.ch). Accessed on 15 April, 2020.
- Iloh, G. U, Chuku, A & Amadi, A. N. (2017). 'Medical Errors in Nigeria: A Cross-Sectional Study of Medical Practitioners in Abia State.' In *Arch Med Health Sci* 5(1): 44-49
- Institute of Medicine. (1999). *To Err is Human: Building a Safer Health System*. Washington, D.C: National Academy Press.
- Institute of Medicine. (2011). *Transforming Practice*. Available at [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov). Accessed on 17 June, 2020.
- Kim, Y., Kim, S.Y. & Lee, K. (2020). Association between Registered Nurse Staffing Levels and In-Hospital Mortality in Craniotomy Patients Using Korean National Health Insurance Data. *BMC Nurs*. 19, (36).
- Lyder, G. H. & Ayello, E. A. (2008). 'Pressure Ulcers: A Patient Safety Issue. In : Hughes, R.G. ed. *Patient Safety Issue and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality (US).
- Makary, M.A. & Daniel, M. (2016). 'Medical Error- The Third Leading Cause of Death in The US. *BMJ*, 353, i2139.
- Molyneux, J. (2001). 'Inter-professional Teamworking: what makes teams work well?' In *Journal of Inter-professional Care*. 15:29-35.



- Moustaka, E & Constantinidis, T.C. (2010). 'Sources and Effects of Work-Related Stress in Nursing'. In *Health Science Journal*. 4(4):210-216.
- Najimi, A., Goudarzi, A.M & Sharifirad, G. (2012). 'Causes of Job Stress in Nurses: A Cross-sectional Study'. In *Iranian Journal of Nursing and Midwifery Research*. 17(4): 301-305.
- Nancarrow, S. A , Booth, A. , Ariss, S. , Smith, T, Enderby, P. & Roots, A. (2013). 'Ten Principles of Good Interdisciplinary Team Work.' In *Human Resources for Health*. 11:19
- Ojerinde, D. (2019). 'Harvest of Deadly Errors in Nigerian Hospitals.' Available at [www.punchng.com](http://www.punchng.com). Accessed on 19 June, 2020.
- Oyebode, F. (2013). 'Clinical Errors and Medical Negligence.' In *Journal of Medical Principles and Practice*.22(4):323-333. DOI: 10.1159/000346296.
- Paans, W., Robbe, P., Wijkamp, I & Wolfensberger, M.V.C. (2017). 'What Establishes an Excellent Nurse? A Focus Group and Delphi Panel Approach.' *BMC Nurs*. 16:45.
- QLICKSMART. (2020). 'Impact of Medication Errors on Patients, Healthcare Providers and Hospitals.' Available at [www.qlicksmart.com](http://www.qlicksmart.com). Accessed on 21 April, 2020.
- Rodziewicz, T. L. & Hipskind, J. E. (2020). *Medical Error Prevention*. Treasure Island : StatPearls Publishing.
- Ronald, L. S. (2000). The Institute of Medicine's Report on Medical Error. *Archives of Pathology and Laboratory Medicine*: November 2000, 124(11): 1674-1678.
- Silva, A. J., Pereira, S. M. et.al.(2013). 'Economic cost of Treating pressure ulcers: a Theoretical Approach.' In *Revista da Escola de Enfermagem da USP*. 47(4).
- Smith, L. S. (2003). Clarifying a Medication Order. *Nursing* 2003, 33(5):26
- Stevens, K.(2013). 'The Impact of Evidence-Based Practice in Nursing and The Next Big Ideas.' In *Online Journal of Issues in Nursing*. 18(2). DOI:10.3912/OJIN.Vol18No02Man04.
- Tingen, M.S., Burnett, A. H. & Zhu, H. (2009). 'The Importance of Nursing Research.' In *Journal of Nursing Education*. 48(3): 167-170.
- WHO. (2000). 'WHO Pharmaceuticals Newsletter 2000, No. 02.' Available at [apps.who.int](http://apps.who.int) Accessed on 16 April, 2020.
- WHO. (2008). 'Summary of The Evidence on Patient Safety: Implications for Research.'
- Wikipedia. 'Dora Akunyili.' Available at [en.m.wikipedia.org](http://en.m.wikipedia.org). Accessed on 30 June, 2020.
- Wikipedia. 'Registered Nurse.' Available at [en.m.wikipedia.org](http://en.m.wikipedia.org). Accessed on 8 June, 2020.