



ASSESSMENT OF NURSES' KNOWLEDGE AND ATTITUDE TOWARDS THE USE OF INFORMATION TECHNOLOGY IN NURSING CARE DELIVERY AT GENERAL HOSPITAL, IQUITA, ORON LOCAL GOVERNMENT AREA, AKWA IBOM STATE.

By

**Ekpenyong, A.U,
Department of Nursing Science
University of Uyo, Uyo
Akwa Ibom State**

And

Abakada, U.E,

Abakada, E.E

**Asuquo, O.
Department of Educational Technology
University of Uyo, Uyo
Akwa Ibom State**

ABSTRACT

The study assessed Nurses' Knowledge and Attitude towards the Use of Information Technology in Nursing Care Delivery at General Hospital, Iquita, Oron Local Government Area, Akwa Ibom State. A cross-sectional descriptive research design was used in this study. The research was carried out in Oron Local Government, Akwa Ibom State. The target population was all the nurses numbering one hundred thirty (130) in General Hospital, Iquita, Oron Local Government Area. A sample size of 98 nurses was used which was determined by Yaro Yamane's formula and a simple random sampling technique was used to select the respondents for the study. A 20 item researcher's constructed questionnaire was used to obtain data for the study. The data collected were analyzed using descriptive statistics of percentages, mean scores, charts and Person Product Moment Correlation was used to test the null hypothesis which was rejected because the calculated value was greater than the critical value. The study showed that there is a significant relationship between nurses' knowledge and attitude of nurses towards information technology on nursing care delivery in General Hospital, Iquita Oron Local Government Area, Akwa Ibom State. The study recommended that nurses should be properly taught on how to interpret output information on the IT devices to avoid misinterpretation of information which may lead to medical errors and mistakes.

KEYWORDS: Nurses' Knowledge, Nurses' Attitude, Information Technology, Nursing Care Delivery, Akwa Ibom State.

INTRODUCTION

Information Technology (IT) is often used as a shortened synonym for Information and Communication Technology. Information Technology can be defined as an information system that provides procedure to record and make available information, concerning part of an organization to assist organization related activities. (Flynn, 2017). Information Technology comprises of all digital technologies that support electronic capture, storage processing and exchange of information in order to promote health, prevent illness, treat disease, manage chronic illness etc.



The environment in healthcare encompassed more than just a physical location. There is an increase in the use of Information and Communication Technology such as mobile computers, wireless solution and automated exchange between health providers and patient. Adapting to these new environment requires a paradigm shift on communication and delivery care which requires knowledge of the evolution of new technologies (David, 2019).

Nursing care delivery are different approaches in which nurses provide care for patients. (Picmonics, 2024). These models are frameworks that are used to help nurses assess, plan and implement care. Nurses in everyday work are encountered with the application of new gadgets, instruments and other modern technologies used for health care delivery. (Nilson & Erilsen 2018).

Used of Information Technology health care delivery system provides opportunities for individuals, medical professionals and health care providers to obtain information on different aspects of diseases, communicate with health care professionals and patient, offer access to medline, medical/nursing journals, textbooks and latest information on breakthrough in health (Dery et al 2016).

Information technology helps in providing a better health care delivery at lower cost and also contribute positively to the quality of health services. One of the primary drivers behind the adoption of Information Technology in nursing is its ability to enhance patient safety and quality of care. Through electronic documentation, nurses can access comprehensive patient information in real – time, enabling timely assessments, accurate medication administration and proactive monitoring of vital signs. Information technology systems facilitates the identification of potential adverse events, medication errors and patient allergies, empowering nurses to make informed decisions and mitigate risks to patient well-being

Information technology empowers nurses to transcend traditional care boundaries and embrace innovative models of care delivery. Telehealth and telemedicine technologies enable nurses to provide remote consultations, monitor chronic conditions and deliver virtual education to patient across geographical distance

STATEMENT OF PROBLEM

A cross-sectional descriptive research design was used in this study. The study was conducted at oron Local Government in Akwa Ibom State. The population for this study comprised of all nurses working in General Hospital, Iquita, Oron Local Government Area. The instrument used for data collection was researcher made questionnaire on knowledge and attitude of nurses to information technology on nursing care delivery. The validity of the instrument was ascertained by giving the instrument to the research supervisor to examine the purpose, research objectives as well as the hypotheses of the study in line with the specific items in the instrument

RESEARCH OBJECTIVE

- i. Assess the level of knowledge of nurses on information technology for nursing care delivery in General Hospital, Iquita, Oron Local Government. Akwa Ibom State
- ii. Determine the attitude of nurses towards information technology for nursing care delivery at General Hospital, Iquita, Oron Local Government, Akwa Ibom State.



RESEARCH QUESTION

- i. What is the level of knowledge of nurses on information technology on nursing care delivery in General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State?
- ii. What is the attitude of nurses towards information technology for nursing care delivery at General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State?

RESEARCH HYPOTHESIS

- i. There is no significant difference in the relationship between level of knowledge of nurses on information technology and nursing care delivery in General Hospital, Iquita, Oron Local Government Area.
- ii. There is no significant difference in the relationship between the attitude of nurses on information technology and nursing care delivery at General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State.

CONCEPTUAL REVIEW

Concepts of Nursing Care Delivery

A nursing care delivery system defines how work is organized, how nursing staff are deployed, and who does what in providing nursing care. It identifies who has the accountability for nursing care and clinical outcomes and provide the organization, rules and structure that define responsibility and accountability. Nursing care delivery models, also called care delivery systems or patient care delivery models, detail the way task assignments, responsibility, and authority are structured to accomplish patient care. The nursing care delivery model describes what health care worker is going to perform which tasks, who is responsible, and who has the authority to make decisions. The purpose of any delivery system is to provide high quality care, efficiently and effectively (Barbara,2016). A patient care delivery model is the method or system of organizing delivery nursing care. The five well-known means of organizing nursing care for patient care delivery are total patient care, functioning nursing, team and modular nursing, primary nursing, and case management. Each of these basic types has undergone many modifications, often resulting in new terminology. The choice of an organizational model involves staff skills, availability, resources, patient acuity, and the nature of the work to be performed. By defining the components of the nursing care delivery system, the foundation of professional nursing practice is described. The professional practice model aligns and integrates nursing practice with the mission, vision, values and philosophy of nursing. The framework of professional practice model guides the nursing strategic plan, identifying clear goals and expectations for all professional nurses to achieve optimal outcomes as defined in our nursing goals; and Practice Environment, Best Patient Experience, Best Quality, and Best Financial Stewardship.

The essential components of nursing care delivery system are responsibility, accountability, clinical decision making and making assignment (Ann, 2017). Patient satisfaction is an important and commonly used indicator for measuring the quality in health care. Patient satisfaction affects clinical outcomes, patient retention, and medical malpractice claims. It affects the timely, efficient, and patient-centered delivery of quality health care. Patient satisfaction is thus a proxy but a very effective indicator to measure the success of doctors and hospitals (Prakash,2018). In addition to being a requirement of accreditation, patient/customer satisfaction is important to the success of health care organizations as businesses. Satisfied patients will share their positive experience.



Because the cost of obtaining a patient is high, losing a patient is a substantial loss of investment. Patient may have been attracted through advertising or an insurance contract. There is evidence of a reciprocal relationship between patient satisfaction and continuity of care.

CONCEPTS OF INFORMATION TECHNOLOGY IN NURSING

Technology refers to the systems, methods and the devices which are outcome of scientific knowledge being used for the practical purposes. All kind of technology provides nurses with different kinds of tools to improve and enable nurse-patient relationship. Information technology in nursing practice is the utilization and application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems developed to solve a health problem and improve quality of lives of patients. The use of IT has improved the health of individuals and enhanced the performance of care providers thus upgrading the quality of care administered to patients by nurses.

Information Technology (IT) has been described as the application of information processing in cooperation with computer software and hardware to store, retrieve, distribute and use healthcare information, data, and knowledge for communication and decision-making. It is the usage of processors and telecommunications tools to store, retrieve, spread and handle the information (Alotaibi& Federico, 2017). It is planned to aid manage the stewardship purpose, maintenance, and managing day-to-day processes and decision making (Lim, 2018).

METHODOLOGY

A cross-sectional descriptive research design was used in this study. The research was carried out in Oron Local Government, Akwa Ibom State. The population for this study comprised of all nurses working in General Hospital, Iquita, Oron Local Government Area numbering one hundred and thirty (130). Simple random sampling technique was used to select respondents from the different wards. A sample size of 98 on was drawn using yaro yamene's formula for the research study. The instrument used for data collection was researcher made questionnaire on knowledge and attitude of nurses to information technology on nursing care delivery. The validity of the instrument was ascertained by giving the instrument to the research supervisor to examine the purpose, research objectives as well as the hypotheses of the study in line with the specific items in the instrument. Split half method was used to ascertain the reliability of the instrument using Pearson Product Moment Correlation Coefficient Formula (PPMC). And it yielded a correlation coefficient of 0.8 the instrument was therefore considered reliable for this study. Data was collected using a researcher made questionnaire which was administered face to face to the respondents in the hospital and the questionnaire was collected at the spot. Data obtained were analyzed using descriptive statistical methods such as simple percentages, frequency table, mean, and pie chart. The hypotheses were tested using Pearson Product Moment Correlation Coefficient (PPMC)

RESULTS AND DISCUSSION

Research Question 1

What is the level of knowledge of nurses on information technology on nursing care delivery in General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State?



Table 1: Level of Knowledge of Nurses on Information Technology on Nursing Care Delivery in General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State

n = 98

S/N	ITEMS	SA	A	D	SD
1.	Information Technology facilities enhances the quality of care.	38 (38.7%)	25 (25.52%)	18 (18.4%)	17 (17.4%)
2.	Information Technology helps in report writing, record keeping and documentation of nursing task.	21 (21.4%)	28 (28.6%)	22 (22.4%)	27 (27.6%)
3.	Acquired Skills to make use of all technological equipment.	27 (27.6%)	29 (29.6%)	24 (24.5%)	18 (18.4%)
4.	Proper orientation is given on how to use information technology equipment.	15 (15.3%)	28 (28.6%)	26 (26.5%)	29 (29.6%)
5.	Information Technology equipment enable greater accessibility of nursing care.	25 (25.5%)	27 (27.6%)	22 (22.4%)	24 (24.5%)

Table 1 shows that 38 (38.7%) strongly agreed that information technology equipment enhances the quality of care, 25 (25.5%) agreed, 18 (18.4%) disagreed and 17 (17.4%) strongly disagreed to this fact. 21 (21.4%) strongly agreed that information technology equipment helps in report writing, record keeping and documentation of nursing task, 28 (28.6%) agreed, 22 (22.4%) disagreed and 27 (27.6%) strongly disagreed to this fact. 27 (27.6%) strongly agreed that they've acquired skills to make use of all technological equipment, 29 (29.6%) agreed, 24 (24.5%) disagreed and 18 (18.4%) strongly disagreed to this fact. 15 (15.3%) strongly agreed that proper orientation is given on the how to use information equipment, 28 (28.6%) agreed, 26 (26.5%) disagreed and 29 (29.6%) strongly disagreed to this fact. 25 (25.5%) strongly agreed that information technology equipment enables greater accessibility of nursing care 27 (27.6%) agreed, 22 (22.4%) disagreed and 24 (24.55%) strongly disagreed to this fact.

Research Question 2

What is the attitude of nurses towards information technology for nursing care delivery at General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State.

Table 2: Attitude of nurses towards information technology for nursing care delivery at General Hospital, Iquita, Oron Local Government Area , Akwa Ibom State.



S/N	ITEMS	SA	A	D	SD
1.	Using Information Technology equipment is often frustrating.	19 (19.4%)	18 (18.4%)	42 (42.9%)	19 (19.4%)
2.	Utilization of Information Technology restricts autonomy of nurses towards in making decisions related to patient care.	16 (16.3%)	19 (19.4%)	39 (39.8%)	24 (24.5%)
3.	Nursing care to the patients on papers to computers as it requires a lot of mental effort	39 (39.8%)	20 (20.4%)	21 (21.4%)	18 (18.4%)
4.	Information Technology equipment for nursing care delivery increases nurse's workload.	15 (15.3%)	28 (28.6%)	26 (26.5%)	29 (29.6%)
5.	Using Information Technology equipment increases the errors of health team.	16 (16.3%)	13 (13.3%)	42 (42.9%)	27 (27.6%)

Table 2 shows that 19 (19.4%) strongly agreed that using information technology equipment is often frustrating., 18 (18.4%) agreed, 42 (42.9%) disagreed and 19 (19.4%) strongly disagreed to this fact. 16 (16.3%) strongly agreed that utilization of information technology restricts autonomy of nurses towards making decisions related to patient care 19 (19.4%) agreed, 39 (39.8%) disagreed and 24 (24.5%) strongly disagreed to this fact. 39 (39.8%) strongly agreed that nursing care to the patients on paper to computers as it requires a lot of mental effort 20(20.4%) agreed, 21 (21.4%) disagreed and 18 (18.4%) strongly disagreed to this fact. 15 (15.3%) strongly agreed that information technology equipment for nursing care delivery increases nurse's workload, 28 (28.6%) agreed, 26 (26.5%) disagreed and 29 (29.6%) strongly disagreed to this fact. 16 (16.3%) using information technology equipment increases the errors of health team 13 (13.3%) agreed, 42 (42.9%) disagreed and 27 (27.6%) strongly disagreed to this fact.

TESTING OF HYPOTHESES

Hypothesis 1: There is no significant difference in the relationship between level of knowledge of nurses on information technology and nursing care delivery in General Hospital, Iquita, Oron Local Government Area.

Table 3: Pearson Product Moment Correlation Analysis of knowledge and attitude of nurses to information technology on nursing care delivery in general hospital, Iquita, Oron Local Government Area, Akwa Ibom State

X - Strongly Agreed and Agreed



Y - Disagreed and Strongly Disagreed

X	Y	X ²	Y ²	XY
63	35	3969	1225	2205
49	49	2401	2401	2401
56	42	3136	1764	2352
43	55	1849	3025	2365
52	46	2704	2116	2392
263	227	14059	10531	11713

n = 5, df = 3, calculated value= 1, critical value = 0.805

Decision Rule: Reject the null hypothesis (Ho1) if calculated value is greater than critical value. Since the calculated value is 1 and is greater than the critical value 0.805 at the level of significance of 0.05 and at the degree of freedom 3, the null hypothesis is rejected indicating that there is a significant relationship between level of knowledge of nurses on information technology and nursing care delivery in General Hospital, Iquita, Oron Local Government Area.

Hypothesis 2: There is no significant difference in the relationship between the attitude of nurses on information technology and nursing care delivery at General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State.

Table 4: Pearson Product Moment Correlation Analysis of knowledge and attitude of nurses to information technology on nursing care delivery in general hospital, Iquita, Oron Local Government Area, Akwa Ibom State

X - Strongly Agreed and Agreed

Y - Disagreed and Strongly Disagreed

X	Y	X ²	Y ²	XY
37	61	1369	3721	2257
35	63	1225	3969	2205
59	39	3481	1521	2301
43	55	1849	3025	2365
29	69	841	4554	2001
203	287	8765	16790	11129

n = 5, df = 3, calculated value= 1, critical value = 0.805

Decision Rule: Reject the null hypothesis (Ho2) if calculated value is greater than critical value. Since the calculated value is 1 and is greater than the critical value 0.805 at the level of significance of 0.05 and at the degree of freedom 3, the null hypothesis is rejected indicating that there is a significant relationship between the attitude of nurses on information technology and nursing care delivery at General Hospital, Iquita, Oron Local Government Area. Akwa Ibom State.

CONCLUSION

In conclusion, the study revealed that nurses at General Hospital, Iquita possess a moderate level of knowledge regarding the use of information technology in nursing care delivery. The findings



showed that most nurses demonstrated a generally positive attitude towards the adoption of information technology in their professional practice. However, gaps were identified in practical skills and consistent utilization of information technology tools in daily nursing activities. Factors such as limited training opportunities and inadequate availability of technological resources were found to influence effective usage.

RECOMMENDATIONS

- 1. Nurses should be properly taught on how to interpret output information on the IT devices to avoid misinterpretation of information which may lead to medical errors and mistakes.**
- 2. Nurses should be provided with access to information technology to enhance communication between nurses and patient**



REFERENCES

Alotaibi, Y. K., & Federico, F. (2017). The impact of health information technology on patient safety. *Saudi medical journal*, 38(12), 1173

Ann,R.(2017): UC Davis Medical Center Barbara,2016).

David, A. F. (2009) Ethics Conflicts in Rural Communities: Health Information Technology in Hand Book for Rural Health Care Ethics: A Practical Guide for Professionals Dartmouth College Press Published by University press of New England

Lim, F. P. C. (2018). Impact of information technology on accounting systems. *AsiaPasific Journal of Multimedia Services Convergent with Art, Humanities and Socialgy*, 3(2), 93-106

Nilson, R. & Erilsen, N. 2016. Health Informatics. An Interprofessional Approach. Picmonics, 2024).

Prakash, B.(2010): Patient Satisfaction, *Journal of Cutaneous and Aesthetic Surgery*,3(3)PP 151155.