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Evaluating the Perception of Student Nurses on the Use of It in Electronic Health Delivery: Case of Presbytarian University College – Asante Akyem Agogo

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Abstract: **Electronic Health (eHealth) is the transfer of health related resources and health care by electronic means. Considering the fact that, the use of eHealth is continuously being integrated into our healthcare services rendered to patients, it was included in the Ghana National eHealth Strategy that, all health training institutions will include basic practical ICT skills that will equip graduates to be conversant with tools, equipment and systems that support eHealth. The purpose of the study is to examine the knowledge and perception of nursing students towards the use of eHealth and also to evaluate how skilful the student nurse is with respect to the use of eHealth in the delivery of healthcare treatment record keeping. A quantitative descriptive *cross-sectional survey* design was employed. The study was conducted in the department of nursing of Presbyterian University College, Asante-Akyem Campus located at Agogo in the Ashanti Region of Ghana. A questionnaire was administered to 254 nursing students randomly selected from different levels and used the statistical Package for Social Sciences version 20.0 for the analysis of the collected data. The findings depict that 85% of students had heard about eHealth, 73% had fair knowledge in eHealth. It was also noted that majority had been exposed to eHealth in the education and clinical. However, most students (56.5%) considered themselves not to be competent in eHealth practices. It is highly recommended that the educational sector inculcate eHealth into the curriculum for the integration of IT solutions into healthcare to flow successfully.**

Keywords: **Electronic Health (eHealth), ICT skills, cross-sectional survey.**

1. INTRODUCTION

Electronic Health (eHealth) is the transfer of health related resources and health care by electronic means (Hallila, Zubaidi, Ghamdi, & Alexander, 2014). According to (Haapiainen & Tellen, 2014), it involves the use of different information and communication technology based tools such as computers, cell phones, televisions, video conferencing software, wearable and portable- health systems in disease prevention, diagnosis, treatment, monitoring and education. (Hallila, Zubaidi, Ghamdi, & Alexander, 2014) continued to explain that eHealth encompasses three main areas.

The delivery of health information, for health professionals and health consumers, through the internet and telecommunications, using the power of IT and e-commerce to improve public health services, e.g. through the education and training of health workers and the use of e-commerce and e-business practices in health systems management.

Health care is an information intensive industry, in which quality and timely information is a critical resource. Computer systems are used within most health care entities such as pharmacies, general medical practices, pathology and radiology services and hospitals to get quality and timely information needed. However, many of the information exchanges between health care providers are still paper based with the attendant inefficiencies of data entry, the difficulty of sharing

paper based records between clinicians, loss of the physical record, difficulties in reading handwriting, the potential for error, and the difficulties in extracting information from large paper files. There is also uneven access to information technology across health care and aged care facilities and between the professions.

Graduating students from nursing programs must possess informatics competency in order to recognize the need for information, know how to obtain it, understand its use, and be able to evaluate the information (Edwards & O"Connor, 2011).

STATEMENT OF THE PROBLEM:

With the aim of improving the health outcomes of the people in Ghana, the health system in Ghana brought policies such as close-to-client policy, free maternal care, review of the premium payment systems to remove existing financial barriers, and the introduction of incentive packages to entice staff to work in deprived areas. Despite the results these policies are producing, they are not enough to improve health outcomes. Hence, eHealth was adapted to present opportunities for progress in the sector development (Ghana Health Service, 2009).

The health sector in Ghana also has a large number of different management units generating large amount of information which are held in separate silos. This creates difficulties in sharing information and a key factor in the inability of the sector to demonstrate its performance effectively. These management units need a common platform for sharing information and the only way that can be achieved is through electronic (eHealth).

A research conducted by (Haapiainen & Tellen, 2014) found out that most nurses were lacking knowledge and skills on Electronic Technology (ET), making it a great need for education to be able to keep the necessary skills and knowledge up-to-date. However, some of the participants complained of no time for extra training and education due to the workload at work. Considering the fact that use of eHealth is continuously integrated nowadays into caring, it is very important for nurses to understand how they can be used safely, effectively and ethically.

From above, to be able to improve health outcomes of the people in Ghana which is the aim of introducing eHealth, student nurses must be equipped with eHealth knowledge and skills before graduating. This has made it necessary to conduct a study to find out if student nurses can use eHealth in delivering health services and information when they come out to be nurses. In order to achieve this broad objective, the following specific objectives will be considered:

- ✓ To determine the knowledge level of the student nurse on eHealth.
- ✓ To find out how adequate is the training institution preparing student nurses for eHealth practice.
- ✓ To determine how adequate are the eHealth facilities at the clinical sites in preparing the student nurse.
- ✓ To evaluate the perception of the student nurse on the benefits and uses of eHealth to healthcare delivery.

RESEARCH QUESTIONS:

- ✓ What is the students' knowledge level on eHealth?
- ✓ How adequate is the training institution preparing the student nurse for eHealth practise?
- ✓ Are there adequate eHealth facilities at the clinical sites in preparing the student nurse?
- ✓ What is the perception of the student nurse on the benefits of eHealth to healthcare delivery?

SIGNIFICANCE OF THE STUDY:

The findings of the study will help nursing training institutions and clinical sites to plan effective and appropriate interventions to help prepare the student nurses adequately for eHealth practice to promote and improve effective use of eHealth in nursing practice. This will help meet the fundamental aim of the health systems in Ghana since nurses make up the largest proportion of health care workers in the country. It will also add up to the body of knowledge in eHealth.

2. LITERATURE REVIEW

The effect of information and communication technologies on every aspect of the society appears impossible to avoid and reversed. It has also brought about positive effect on medical and health fields. There is a growing consensus that ICT improve quality of care and efficiency of health care services. (Edirippulige, Smith, Beattie, Davies, & Wootton, Pre-registration nurses: an investigation of knowledge, experience and comprehension of e-health., 2006).

Limitations of paper-based records are influencing a transition across the globe towards Electronic Health Records (EHRs) and in general electronic health (eHealth)(Mugo & Nzuki, 2014). They additionally argued that adoption of ICT in health sector across developing countries will advance the spread of knowledge and also increase access to health information. In Ghana, Electronic Health Information Technology, (EHIT) adoption has become an imminent part of the national health care delivery system.(Mugo & Nzuki, 2014)

Computer and Internet skills literacy have become relevant for nursing students. It helps them to achieve their learning goals. These skills are also relevant for their future career since they communicate most with the patients. So, the competence to use Information Technology (IT) by nurses is becoming an important need in every part of nursing education. (Hallila, Zubaidi, Ghamdi, & Alexander, 2014).

eHEALTH AND NURSING:

"eHealth is an emerging field of medical informatics, referring to the organisation and delivery of health services and information using the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a new way of working, an attitude, and a commitment for networked, global thinking, to improve healthcare locally, regionally, and worldwide by using information and communication technology." (Anandan, Black, Car, Cresswell, Pagliari, McKinstry, Procter, Majeed, & Sheikh, 2008)

(Royal College of Nursing position statement, 2012), also defined eHealth as the use of information management and information and communication technology (ICT) in promoting, empowering and facilitating health and wellbeing of individuals, families and communities and enhancing professional practice.

It also stated that eHealth covers the following;

1. Electronic patient records (including assessment and care planning, electronic nurse prescribing, patient scheduling, online laboratory requests/results, e-pharmacy, clinical communications such as discharge/ transfer letters)

2. Electronic communication with patients/ professionals (includes telephone support/advice lines, email or SMS text messaging on health promotion advice and management or appointment reminders.)

3. Telehealth: refers to the provision of care from a distance using a range of electronic technologies. Examples of telehealth include video consultations to support diagnosis and management, remote monitoring, clinical networks and health professional education(Royal College of Nursing, 2012)

4. Telecare: Telecare is the provision of technology to enable a patient or client to live more safely and with greater independence within their home. For example, pendant alarms or smoke and heat sensors, and alarms to summon help in an emergency. Telecare programmes, on the other hand, are often led by social care organisations, such as local authorities.

5. Information management (reusing data recorded for care purposes to improve care, run clinical services, health care research, patient informed decision making, etc.)

6. Information governance (covers confidentiality, system security and data protection, data quality)

7. Personal health records (a repository of information considered by the individual to be relevant to his or her health, wellness, development and welfare, and for which that individual has primary control over the record's content). (Royal College of Nursing position statement, 2012)

In the 1960, Donald Lindberg, the pioneer in eHealth used Information and Communication Technology to manage the quality of his microbiology lab processes, including the automated transmission of lab results to the wards. He believed that ICT resolved two fundamental needs, data analysis and reduction of lab errors. Allan Levy and some others supported the idea that informatics in health care needed to bring together health care professionals, engineers and computer scientists to develop systems which improved clinical outcomes.

KNOWLEDGE OF NURSES AND STUDENTS ON eHEALTH:

Nurses need to acquire Internet skills to help patients find significant information for their health related questions not only for their studies. Nurses working in health care settings play an essential role in the health management of patients who access health information from internet sources through education. This guides them when taking health

management decisions for themselves. Therefore it is necessary that nurses and nursing students have knowledge about online health information resources to be able to compute relevant information online to help patient and patients' families' obtain dependable and relevant information. (Hallila, Zubaidi, Ghamdi, & Alexander, 2014).

TRAINING INSTITUTIONS AND eHEALTH PREPARATION OF STUDENT NURSES:

Introduction of eHealth into the healthcare sector means that health care practitioners will have to learn new skills and ways of working. They need to understand the eHealth technology, be confident and able to support patients and carers in its use. To be able to work within the recognised professional codes of conduct and competency frameworks, all health care practitioners should be supported by adequate clinical supervision and training (Royal College of Nursing, 2012)

Courses in IT provide student nurses and other health students with valuable training on how to use computers and also prepare them in a way to meet the needs of the fast changing technological world. "However these courses have focused specifically on fundamental computer operating skills, such as word processing and database management (such as access to reference libraries). To date there have been very few eHealth subjects incorporated into undergraduate health programs which formally conceptualise eHealth and demonstrate the potential benefits in clinical, educational and administrative applications" (Edirippulige, Smith, Beattie, Davies, & Wottom, 2006).

The University of KwaZulu-Natal runs a Medical informatics programme offering PhD, coursework Masters, Masters by research only, Postgraduate Diploma and a Master's in Public Health, MPH with specialisation in Medical Informatics. Degree in computer science is the entry requirement (Norwegian Nurses Organisation, 2012). It also offers the only postgraduate programme in Telemedicine in South Africa, with PhD, Masters, Postgraduate Diploma and Masters in Public Health qualifications. The structure of the programmes is the same as for Medical Informatics. The entrance requirements for the Masters level qualifications are a 4 year Bachelor's Degree or a professional Bachelor's Degree (Norwegian Nurses Organisation, 2012). These educational programmes aim to develop competent and skilled telemedicine practitioners and managers as well as to broaden the base of health workers exposed to telemedicine. (Department of health; South Africa, 2012).

BENEFITS OF eHEALTH:

It has been realized that using technology in health (eHealth) specifically in nursing is very beneficial. Nursing activities incorporated into informatics are functional from patients' admission, care planning, discharge and follow ups. eHealth advancement has made activities like cost analysis, procedure manual, drug dosage calculation, finding trends for budget purposes and nursing electronic/online learning programmes possible (Sarfo & Aseidu, 2013). As a result of the benefits the EU commission has adopted eHealth as an umbrella term to represent digital technology applications for health development and improvement at individual and societal level. The concept covers self-care, social care, health care as well as health care providers' interactions with patients, their significant others and other stakeholders (Swedish Society of Nursing, 2012)

Emerging eHealth systems have the potential to reduce errors and enhance patient safety, improve the legibility of clinical communications, enables health records to be shared, reduce reliance on human memory and prompting evidence-based prescribing. Looking at automated monitoring and routine feedback, it has been shown to reduce the rate at which hospitalised adults with renal insufficiency received excessive doses of medication (Anandan, et al., 2008). Telecare technology also determines how a patient is which can be used to replace night rounds and monitor patients at home. Nurses on duty are notified when something goes wrong by sending an SMS message automatically. The alarm signals are also linked to map data which displays the address and the nurse who is geographically closest can perform additional monitoring as a targeted home visit. This can release parts of the work force through changes in the organising of the services, more efficient utilisation of limited resources, whether as on-call collaborations between city sectors in large municipalities, or between municipalities (Norwegian Nurses Organisation, 2012).

eHealth is allowing for innovative health care as well as reducing the costs of delivery, delivering services of a similar or improved quality at a reduced cost and meeting the specific health needs of a community's population. eHealth services helps the practitioner to meet the key aims (prevention and staying healthy, self-management, assisted management, supported management and palliative care) for supporting patients with long term conditions, LTCs(Royal College of Nursing, 2012). The remote monitoring of physiological signs such as a patient's blood pressure and sugar enables nursing staff to care for more patients, more efficiently(Royal College of Nursing, 2014).

Additionally, eHealth allows care to be effectively coordinated across multi-professional teams. It also makes documentation legible and structured making it easier and faster to find relevant information as well as saving valuable time spent on writing, filing and finding lost records for patient care. The records can be analysed to identify outcomes for audit and research purposes.

eHealth does not only benefit practitioners but also has numerous benefits for patients and the people exposed to it. For patients, eHealth offers a range of potential benefits, such as improved monitoring of conditions, more targeted access to service providers, reduced travel and quicker clinical discussion and diagnosis. Services also play a pivotal role in promoting self-management of long-term conditions and enabling the patient to live at home longer and to have a more independent lifestyle.(Royal College of Nursing, 2012)

eHealth is helping to improve patients' self-management of LTCs and enabling the patient to live at home for a longer time and have a more independent lifestyle, preventing the deterioration of health as well as decreasing the need for surgery consultations and hospital admissions Diabetic and hypertensive patients, for example, can monitor their own blood sugar and blood pressure respectively and receive advisory text messages from a specialist nurse on their mobile phones(Royal College of Nursing, 2012). (Hallila, Zubaidi, Ghamdi, & Alexander, 2014), also found that patients with chronic illness mostly use online health information to assist them with their educational needs.

Electronic record has improved patients' safety and continuity of care because of better and more accurate patient information. It has also brought some convenience, since patients won't have to repeat basic information over and over again, as they pass along the chain of health providers. It has also eradicated wasted appointments because of 'lost' notes about patients.

A descriptive cross-sectional survey carried out by (Hallila, Zubaidi, Ghamdi, & Alexander, 2014) in the year 2009 on a random sample of 540 nurses employed in medical wards with a response rate of 58% (sample size 293), most respondents (78%) were content with the internet access at work and 52% believed that the use of online information improved care delivery.

CHALLENGES TO eHEALTH ADOPTION AMONG NURSES:

For the integration of IT solutions into healthcare to flow successfully, it depends on clinicians. The engagement of clinicians and patients right from the start of the integration and evaluation of these new applications is extremely essential (Anandan, et al., 2008).

A significant challenge in eHealth adoption among nurses is in the provision of services, making and sustaining relationships with patients without their physical presence which represents a very different way of working for most health care practitioners (Royal College of Nursing, 2012).

A research conducted among nurses with no knowledge about eHealth showed that those with IT skills could use some of the tools effectively whiles those with IT knowledge could not because they had no knowledge on how to put the theory into practice. Poor internet skills prevent them to understand how the eHealth system operates as well as interpreting information meant for them (Mugo & Nzuki, 2014). Others too complained of too much workload leaving them no time for extra training and education (Haapiainen & Tellen, 2014).

3. METHODOLOGY

The design of the study was a descriptive cross-sectional survey design using the quantitative approach. The research was conducted in the department of nursing of Presbyterian University College, Asante Akyem Campus located at Agogo in the Asante-Akyem North district in the Ashanti Region of Ghana. For this study, the nursing students were the target population. The sample for the study consists of both male and female nursing students of the Presbyterian University College at Asante Akyem Agogo.

Disproportional Stratified Sampling Technique under the probability sampling method was used in selecting the sample for the study. The tool of data collection was questionnaires. Secondary data was obtained from journals, books, articles, and other useful materials on the internet.

Statistical Package for Social Sciences (SPSS) version 20.0 was used for data analysis. The t-test and measures of central tendency was used where appropriate. For all statistical tests, $\alpha = 0.05$ was used to determine statistical significance.

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4. DATA ANALYSIS

The data collected was edited to check for consistency and accuracy. They were coded using numeric values to reduce the level of entering errors and was analysed using a Statistical Package for Social Sciences (SPSS version 20.0).

Demographic data:

The demographic data involves the background of respondents; it involves gender, age, and level of respondents.

Table 4.1 Demographic Data

GENDER	FREQUENCY	PERCENTAGE%
Male	70	27.3
Female	186	72.7
Total	256	100.0
AGE		
15-20 years	37	14.5
21-25 years	197	77.0
26-30 years	18	7.0
31-40 years	4	1.6
Total	256	100.0
LEVEL		
Level 100	64	25.0
Level 200	64	25.0
Level 300	64	25.0
Level 400	64	25.0
Total	256	100.0

Source: Field Survey, 2016

Table 4.1 depicts the findings on respondents' demographic data, 72.7% who were the majority were females and 27.3% were males, 77% of respondents were between the ages of 21-25 years, 14.5% were between the ages 15 to 20 years, 7% were between 26 to 30 years and 1.6% were between 31 to 40 years, and 25% of each level 100, 200, 300 and 400 who were equally selected from each level.

Table 4.2 Crosstab Of Respondents' Knowledge On eHealth

Level	Have you heard of eHealth		Total	P value
	Yes	No		
Level 100	40 (66%)	21(34%)	61	
Level 200	50(78%)	14(28%)	64	
Level 300	64(100%)	0(0)	64	
Level 400	61(97%)	2(3%)	63	
Total	215(85%)	37(15%)	252	.000
Level	**Do you consider yourself having fair knowledge in eHealth**			
Level 100	39(61%)	25(39%)	64	
Level 200	44(71%)	18(29%)	62	
Level 300	54(90%)	6(10%)	60	
Level 400	47(75%)	16(25%)	63	
Total	184(73%)	65(27%)	249	.013

Source: Field Survey, 2016

Table 4.2 depicts crosstabs relationships of respondents and their level/class as against whether they had heard of eHealth and their fair knowledge in eHealth.

In all 85% of respondents being the majority had heard about eHealth and 73% also being the majority had fair knowledge in eHealth. The results further on revealed that respondents hearing and fair knowledge in eHealth rises or increases with their level/class, that is respondents hearing about eHealth showed increases from level 100 (66%), level

200 (78%), level 300 (100%) and level 400 (97%) with p value=.000 which was statistically significant. Also with regards to respondents having fair knowledge in eHealth it also increased as level 100 (61%), level 200 (71%), level 300(90%) and level 400 (75%) with p value =.013 also being significant. This showed that respondent knowledge increased as their level increased.

This was opposite with a study by Edirippulige, et al. (2006) investigating on the knowledge nurses who were about to register for eHealth courses has on eHealth; most respondents (76%) were unfamiliar with the term eHealth. Al-Huneiti, (2014), also came out with a research finding that despite the fact that more than half of the respondents regularly used computers for their nursing education and their day to day activities, their awareness and knowledge about eHealth care was very limited, making them lack the general understanding and awareness regarding its benefits.

Table 4.3 Respondents' source of knowledge and their rate of current knowledge

Which of these is your source of knowledge	**Frequency**	**Percentage%**
Lectures	113	46.1
Books	38	15.5
Literature	2	.8
Internet	57	23.3
Hospital	35	14.3
Total	245	100.0
How will you rate your current knowledge and skills in relation to eHealth	18	7.0
Advanced	59	23.5
Intermediate	105	41.8
Minimal	72	28.7
None	15	6.0
Total	251	100.0

Source: Field Survey, 2016

Table 4.3 shows that 46.1% of respondents indicated that their source of knowledge was from lecturers, 23.3% said from the internet, 15.5% said from books, 14.3% said from the hospital and 8% said from literature, this shows that respondents source of knowledge was from lectures. Again, respondents rate their current knowledge and skills in relation to eHealth as intermediate 41.8%, 28.7% said minimal, 23.5% said advanced whereas 6% said none, this also revealed that majority of respondents rate their current knowledge and skills in relation to eHealth as intermediate. Edirippulige, et al. (2006) again disagreed that in rating of their knowledge, 82% rated their knowledge of eHealth as minimal and 9% only had enough knowledge on eHealth. 87% (49) admitted they never had eHealth education in any form. But the result was similar to (Tubaishat & Habiballah, 2016) research findings where students had moderate self-perceived level of eHealth literacy.

Table 4.4 Student Preparation for eHealth Practice By Training

Have you ever been exposed to eHealth education in your study	**Frequency**	**Percentage%**
Yes	168	65.9
No	87	34.1
Total	255	100.0
Forms of eHealth you have been taught		
mHealth		
Yes	83	32.4
No	173	67.6
Total	256	100.0
Nursing informatics		
Yes	42	16.4

No	214	83.6
Total	256	100.0
Electronic health records		
Yes	51	19.9
No	205	80.1
Total	256	100.0
Table 4.4 continued		
Telemedicine		
Yes	29	11.3
No	227	88.7
Total	256	100.0
Health knowledge management		
Yes	48	18.8
No	208	81.3
Total	256	100.0
Health information management		
Yes	78	30.5
No	178	69.5
Total	256	100.0
Computerized physician order entry		
Yes	16	6.3
No	240	93.8
Total	256	100.0
Usage of e-learning in communicating with your lecturer		
Yes	237	94.0
No	15	6.0
Total	252	100.0
Which of these do you use e-learning for		
Handing notes	16	6.8
Submitting assignments	191	80.6
Discussion forums	30	12.7
Total	237	100.0

Source: Field Survey, 2016

Table 4.4 also shows students preparation for eHealth practice by training, it was noted that majority of respondents 65.9% indicated "yes" they had been exposed to eHealth education whilst 34.1% of respondents said "no" they had not. Edirippulige, et al 2006 also indicated that ccourses in IT provide student nurses and other health students with valuable training on how to use computers and also prepare them in a way to meet the needs of the fast changing technological world. "However these courses have focused specifically on fundamental computer operating skills, such as word processing and database management (such as access to reference libraries). To date there have been very few eHealth subjects incorporated into undergraduate health programs which formally conceptualise eHealth and demonstrate the potential benefits in clinical, educational and administrative applications.

Concerning the forms of eHealth respondents had been taught it revealed that majority of respondents 67.6% said no to mHealth whereas 32.4% of respondents said yes they had been taught, 83.6% of respondents said no to nursing informatics whilst 16.4% said yes. Majority of respondents 80.1% also said no to electronic records and 19.9% said yes, also, 88.7% of respondents said no to being taught telemedicine whilst 11.3% said yes. 81.3% of respondents said no to being taught health knowledge management whereas 18.8% said yes. 69.5% said no to being taught health information management whilst 30.5% yes, 93.8% of respondents said no to being taught computerized physician order entry and 6.3% said yes, and finally 96.9% of respondents also said no to being taught e-prescribing whilst 3.1% said yes. This showed that majority of students had not being taught eHealth forms. This was in agreement with Edirippulige, et al. (2006) who also disagreed that students, 87% (49) admitted they never had eHealth education in any form. Again, the Royal College of Nursing position statement, (2012), indicated that eHealth covered the following: electronic patient records, telehealth, telecare, information management. But students seemed not to have been taught.

It was revealed from the research that majority of respondents (94.0%) said yes they used e-learning in communicating with their lectures whereas 6% said no they do not. 80.6% of respondents who were the majority said they used e-learning for submitting assignments, 12.7% said they used e-learning for discussion forums, and 6.8% said they used e-learning for handing notes. This was similar at Telemark University College, Norway, where eHealth has been integrated into their curricula. Students and lecturers use electronic classrooms for handing in notes, assignments and common discussion forums. (Norwegian Nurses Organisation, 2012)

Table 4.5 eHealth Applications In Use At The Clinical Site

Patient registration	**Frequency**	**Percentage%**
Yes	81	31.6
No	175	68.4
Total	256	100.0
Recording and storing of patients health records age		
Yes	154	60.2
No	102	39.8
Total	256	100.0
Manage information recorded		
Yes	65	25.4
No	191	74.6
Total	256	100.0
Table 4.5 continued		
Making out-patient appointment		
Yes	22	8.6
No	234	91.4
Total	256	100.0
Monitor patient at home		
Yes	4	1.6
No	252	98.4
Total	256	100.0
Obtaining lab results through the internet		
Yes	28	10.9
No	228	89.1
Total	256	100.0
Transmission of ECG		
Yes	34	13.3
No	222	86.7
Total	256	100.0
Transmission of X-rays		
Yes	30	11.7
No	226	88.3
Total	256	100.0
Teleconferencing by phone		
Yes	11	4.3
No	245	95.7
Total	256	100.0
Video conferencing of consultation with health professionals		
Yes	9	3.5
No	247	96.5
Total	256	100.0
Video conferencing for education		
Yes	11	4.3
No	245	95.7
Total	256	100.0

Source: Field Survey, 2016

With regards to what applications of eHealth was used for, it was from the research that 175 (68.4%) of respondents said eHealth application was not used for patient registration and 81 (31.6%) said they do. On the other hand 154 (60.2%) who were majority of respondents said eHealth was used for recording and storing patients health records whereas 102 (39.8%) said no. In managing information recorded, majority of respondents 191 (74.6%) revealed that no they do not whilst 65 (25.4%) said yes, again with regards to making out-patient appointment eHealth application was not used 234 (91.4%) as indicated by respondents. It was the same respectively as majority of respondents, 252 (98.4%) said no the clinical site did not use eHealth application for monitoring patient at home, no for obtaining lab results through the internet 228 (89.1%), no for transmission of ECG 222 (86.7%), no for transmission of X-rays 226 (88.3%), no to teleconferencing by phone 245 (95.7%), no to video conferencing of consultation with health professionals 247 (96.5%), and likewise no to video conferencing for education 245 (95.7%).

Table 4.6 Perception On The Benefits Of eHealth

Do you consider eHealth important to nursing profession	**Frequency**	**Percentage%**
Strongly agree	123	50.6
Agree	107	44.0
Disagree	8	3.3
Undecided	5	2.1
Total	243	100.0
Do you believe that eHealth can improve nursing practice		
Strongly agree	144	58.8
Agree	88	35.9

Table 4.7 continued

Disagree	8	3.3
Undecided	5	2.0
Do you believe that eHealth can improve healthcare delivery		
Strongly agree	149	60.8
Agree	81	33.1
Disagree	9	3.7
Undecided	6	2.4
Total	245	100.0

Source: Field Survey, 2016

In table 4.7 it was noteworthy that majority of respondents 123 (50.6%) strongly agreed that eHealth was important to nursing profession, 107 (44%) agreed, whereas only 8 (3.3%) and 5 (2.1%) disagreed and were undecided respectively. This results were similar to Sarfo & Aseidu, (2013) who indicated that it has been realized that computers in health (eHealth) specifically in nursing is very beneficial to nursing profession. Nursing activities incorporated into informatics are functional from patients' admission, care planning, discharge and follow ups. eHealth advancement has made activities like cost analysis, procedure manual, drug dosage calculation, finding trends for budget purposes and nursing electronic/online learning programmes possible.

Furthermore, majority of respondents 114 (58.8%) strongly agreed eHealth can improve nursing practice, 88 (35.9%) agreed, whereas 8 (3.3%) disagreed and 5 (2%) of respondents were undecided. The Royal College of Nursing, (2012), revealed that eHealth is allowing for innovative health care as well as reducing the costs of delivery, delivering services of a similar or improved quality at a reduced cost and meeting the specific health needs of a community's population. eHealth services help the practitioner to meet the key aims.

Majority of respondents 149 (60.8%) strongly agreed that eHealth can improve healthcare delivery, 81 (33.1%) agreed, whilst 9 (3.7%) disagreed and 6 (2.4%) were undecided. In line with this a descriptive cross-sectional survey carried out by Hallila, et al. (2014) in the year 2009 on a random sample of 540 nurses employed in medical wards with a response

rate of 58% (sample size 293), most respondents (78%) were content with the internet access at work and 52% believed that the use of online information improved care delivery.

5. CONCLUSION AND RECOMMENDATION

In conclusion, most respondents had heard about eHealth and they had fair knowledge in e-health. This was significant (heard p=.000 and fair knowledge, p=0.013) as their knowledge increased with their level. Sources of knowledge were from lecturers, the internet, books, literature and the hospital. Respondents rated their current knowledge and skills in relation to eHealth as intermediate.

Most respondents had been exposed to eHealth education and most respondents had not been taught mHealth, nursing informatics, electronic records, telemedicine, health knowledge management, health information management, computerized physician order entry and e-prescribing. They mostly used e-learning in communicating with their lecturer and they mostly used e-learning for submitting assignments.

Again, respondents had been exposed to eHealth during their clinical, applications that eHealth were used for at the clinic was recording and storing patients health records at the clinic, it was not used for patient registration, managing information recorded, for making out-patient appointment, monitoring patient at home, obtaining lab results through the internet, transmission of ECG, transmission of X-rays, teleconferencing by phone video conferencing of consultation with health professionals and likewise not for video conferencing for education.

It was noteworthy that most of respondents strongly agreed that eHealth was important to nursing profession, and improve nursing practice, as well as improve healthcare delivery.

It is highly recommended that the educational sector inculcate eHealth into the curriculum for the integration of IT solutions into healthcare to flow successfully, this will provide health care givers graduating from learning institutions systemic training and education on the use of the eHealth.

Limited ICT Infrastructure also contributes to eHealth adoption. Due to insufficiency, desktop computers are seen at the head nurse's office only in most hospitals leaving the rest of the nurses with no access to the computers, there is the need for hospitals to try and provide such infrastructures to facilitate the adoption of eHealth.

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