

NURSES PARTICIPATION TOWARDS ADVANCEMENT OF TECHNOLOGY

Robina Kousar, BScN Post RN, Independent College of Nursing, Faisalabad,
Shafquat Inayat, Principal of Nursing Department, Independent College of Nursing, Faisalabad.

Date of Received: 28/08/2018

Date of Acceptance: 24/10/2018

ABSTRACT

This investigation of medical nurses is based upon the participation of nurses in the advancement of computer technology for the better health and clinical care. They are however baffled by impediments of access to the innovation, programming that isn't generally fit for reason, absence of chances for preparing and workload preventing access. The level of utilization of data innovation and data administration frameworks is for the most part low and trust being used is low even among clients. There is confirm that recognition, utilize and trust being used is marginally higher in medical attendants who have late tertiary instruction. Results to a great extent affirm conclusions from littler examinations. Attendants feel ineffectively educated about data innovation wellbeing activities and inadequately counseled about their usage. Workload, number of PCs and lacking specialized help are the key obstructions to utilization of data innovation. Specialized help is to a great extent inadequate particularly in more remote areas. Neither the maximum capacity of data innovation in the arrangement of wellbeing and matured care nor the acknowledgment by medical caretakers that data innovation is a vital piece of nursing was acknowledged until the point when these restrictions are tended to.

Key words: Nurses, computer technology, advancement.

Article Citation: Kousar R, Inayat S. Nurses Participation Towards Advancement of Technology. *IJAHS*, Oct-Dec 2018;04(01-09):220-228.

Correspondence Address

Shafquat Inayat,
Principal of Nursing
Department, Independent
College of Nursing,
Faisalabad.
shafquat.rana@hotmail.com

INTRODUCTION

The use of computers and technology in departments of health enhances the abilities of the nurses to make decision and quality of health care. Since 1960s, field of nursing is being assisted by computerized technology for the development and exchange of the basic information.¹ In the department of health, use of technology has exponentially increased over few decades. Computer-based information systems can provide assistance to nurses in health-care environments. To ensure efficient and effective use of computers in health-care environments, it is necessary to determine nurses' attitudes towards the use of computers. The most important determinant of attitudes towards computer use in health care is thought to be computer literacy. Computer literacy is briefly defined as the ability to use a computer. Nevertheless, various definitions have been given

for computer literacy, such as 'the ability to control computer in achieving certain goals.

With the more extensive scale presentation of different health informatics and electronic health (eHealth) technologies in the late 1990s, the Canadian health framework started a central advancement from conventional paper-based modalities of data exchange to those supported by electronic correspondence. Despite the fact that nursing had built up a critical collection of writing inspecting informatics and innovation at this point, aggregately the calling has been ease back to adjust the abilities, learning, and capabilities required to execute and lead technologic development in a changing health framework condition.²

To address this hole inside the profession with respect to informatics, nursing researchers

started to create projects of research devoted to inspecting computer and mechanical skills amid the late 1990s and around the turn of the century.³ In the mid-2000s, nursing scientists started to distribute reports that analyzed different center skills (e.g. computer education, informatics learning and aptitudes) and indicated to be a "thorough poor of informatics abilities and learning for nurses".³ In spite of their proposed fact there was a compelling in building mindfulness identified with informatics abilities in the calling, the significance of a portion of the skills turned out to be immediately obsolete because of the exponential development of and generational nature with innovation.

During same time period the expanded energy of computer, mobile, and the universality of the Internet inside the shopper circle started to acquire deceivability in the nursing profession. Reports and studies sketching out the utilitarian utilization of Web 2.0 and web-based social networking stages like web journals and wikis started to show up inside the nursing training writing.⁴

To date, innovation utilization, as conceptualized by the Infoway model⁵ has been to a great extent conjectured as a result variable anticipated by factors identified with both the client and their quick condition (e.g., exertion required to utilize framework, value of framework, social impact, and so forth.). The two noteworthy hypothetical models illuminating and strengthening innovation use as a needy variable started from broadly referred to models of innovation acknowledgment, including the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Utilization of Technology (UTAUT).⁶ The best concern with respect to the utilization of these systems in nursing originates from the to a great extent twofold point of view in which innovation utilize is conceptualized (e.g., utilized or not utilized). Essentially, the significance of different superfluous social and specialized components is ordinarily limited in

models created from the⁶

Significance

The current research project has its own importance in the findings of use of technology and participation of nurses to boast up the health care activities. It is based upon the determination of advancement of technology in the health departments and clinical perspectives.

The aims and objectives of this research work were to examine the advancement of technology and participation of nurses in it. These aims are discussed below in a good way.

- To examine that how the computer technology helps the nurses of different departments.
- To find out the use of informatics and internet in work place.
- To determine the merits and demerits of advancement of technology.
- To study the hurdles in approaching to the utilization of technology.
- To check out the role of management and nurses using technology in the work place.

METHODOLOGY

The expressive overview configuration was utilized to depict staff's technology utilize and connections between their age, sex, essential instruction, work position, support in proficient computer courses or application courses, and inspiration to utilize IT. Also, factors limiting staff's ideal utilization of computers were investigated. The intention was to consider the connections between people's qualities and computer technology utilize, and in this way a quantitative approach was picked. In this stage singular elements will client qualities that worked as outer factors in TAM hypothesis. The examination was actualized in Allied hospital with nursing staff of 162. The consideration criteria will as take after: perpetual or transitory work among the season of information gathering, work with patients (enlisted medical attendants,

specific medical attendants, nursing chiefs, down to earth medical caretakers, specialists, social laborers, clinicians, ward secretaries, advisors) and deliberate interest in the investigation. The rejection criteria won't work with patients and time away or wiped out leave. In this investigation it will conjectured that there is relationship between social insurance staff's individual qualities and staff's PC use in mental clinics.

The SPSS 17 programming bundle was utilized to perform factual examination of the discoveries acquired in the investigation. The middle, least and greatest qualities, number juggling mean and standard deviation were utilized to assess ordinal information, though recurrence and rate esteems were utilized to assess ostensible information. To decide if the conveyance will typical or not, we utilized the Kolmogorov-Smirnov appropriation test.

Sampling

The participation of Allied hospital Faisalabad nurses toward advancement of technology was chosen. The database of nurses was collected using questionnaire. Nurses (sample size $n = 162$) of different department were given the questionnaire to examine the utilization of technology in the work place.

Individuals were enlisted medical caretakers of all levels including clinical attendants and executives of nursing, maternity specialists, selected medical attendants, colleagues in nursing and individual care collaborators, Classification titles change between the states and domains. Therefore, for the motivations behind the examination, arrangements were gathered to guarantee consistency in deciphering comes about. Every budgetary individual from the Allied hospital were qualified for incorporation in the stratification procedure. Respondents were drawn from the enrollment databases from all health departments of Allied Hospital. For most omnibus investigations, this number of members gives adequate energy to identify little impact

sizes with an alpha level set at $p < 0.05$ with energy of 0.80. Moreover, the expansive example estimate empowered adequate power for numerous post-hoc investigations to be directed with satisfactory controls included for family-wise mistake. It additionally gave adequate power, by and large, to direct investigations, for example, the examination of parts inside every work level without loss of affect ability.

Distribution

So as to guarantee privacy the accompanying procedures were embraced: The Branches of the Allied Hospital each produced a coded rundown of every one of their individuals coordinated to the postcode of every part. Following a three-week time span the examination group circulated a moment mail out after a similar methodology with the special case that the Allied Hospital departments were sent arrangements of codes of just those medical caretakers from whom no reaction had been gotten. At no stage did the exploration group approach any data which could connect respondent's code number to the respondent's name. At no stage did the Australian Nursing Federation approach review information from which respondent codes could be resolved.

Data entry

The surveys were naturally checked for section of quantitative information utilizing Tele Form. Information from the two free content inquiries were entered physically. All examined polls were checked for filtering mistakes and redresses physically entered.

Data analysis

Investigation was attempted using SPSS on a thing by-thing premise using graphic and inferential factual instruments as suitable to the size of estimation.

Quantitative data

Dichotomous and clear cut factors were portrayed utilizing frequencies and extents. Consistent factors were portrayed utilizing

implies with 95 percent certainty interims. Each inquiry was broken down based on all reactions. Along these lines, a few examinations including different factors in the outline required pooling of information to make adequate power. Discovery of huge contrasts in extents between two dichotomous or straight out factors was accomplished by the utilization of cross-classifications utilizing the X^2 trial of criticalness and Fisher's correct trial of noteworthiness if expected cell frequencies in a 2×2 grid were under five. Numbers in a few investigations were very vast and accordingly there was a penchant in the information for some, correlations with be huge in spite of very little impact sizes. The Phi-coefficient or Cramer's V (for the situation where one or the two factors have in excess of two levels) gives a sign of the quality of the connection between two all-out factors. It was chosen that a principle impact would just be accounted for if: $p < 0.05$ and the Phi coefficient or Cramer's V was 0.10 or more prominent.

In this and all other announced examinations, Bonferroni changes in accordance with alpha levels were made to control for family-wise blunder rates in any post-hoc correlations directed. Correlations between dichotomous or clear cut factors and nonstop factors were accomplished using univariate examination of fluctuation (ANOVA). To guarantee that announced contrasts were important, a F measurement was viewed as noteworthy if: $p < 0.05$ and the related fractional n^2 , a sign of the measure of change clarified by the connection between the factors in the investigation, was 0.01 or more noteworthy. In the event that the two factors being looked at were persistent in nature, a Pearson connection coefficient was utilized to portray the quality of the relationship. Reliable with different examinations, a relationship was viewed as significant if $p < 0.05$ and Pearson's $r > 0.10$.

RESULTS

Demographic data from the study were compared

to national statistics from the Allied Hospital. It should be noted that there is limited information available about the assistant in nursing workforce in any sector and most national statistics are only presented for enrolled nurses and registered nurses.

On sex of the respondent is given in table 1. The proportion of male respondents was 9.26% of all nurses and also 86.42 % for enrolled nurses and registered nurses. For the 162 assistants in nursing respondents the proportion of males was 9.26%.

Age was gotten from year of birth. The mean times of females and guys were 46.51 and 51 years individually. Information of age by sex are exhibited in table 2.

Female respondents were measurably altogether more seasoned than guys by 1.8 years. Information of age by sex separated into age bunches are displayed in table 10 alongside the extent of all medical caretakers over the age groupings. Fifty-seven percent of respondents were 46.5 years old or more seasoned and the best extent of respondents (39.5%) was in the 45-55 age gathering.

Examination of the study respondents at the level of associate in nursing with enlisted nurture and enrolled nurture is given in table 3. Aides in nursing had a higher extent of medical caretakers 25-34 or more older (55 %) compared with alternate attendants (0.62 %). Less of the enlisted nurture and enrolled nurture respondents were under 25 (5 % versus 15 %) and more were more established than 35-44 (46.5% versus 0.62 %). Enrolled medical attendants level 1 were the most youthful of the considerable number of medical attendants and the more senior enlisted medical attendants (levels 4 and 5) were the most seasoned of the enlisted nurses.

Just about 80% of the respondents to the study were utilized as an enrolled nurture (table 5).

Note: States and domains have their own particular characterization structures for nursing. The registered nurses were 62.96 %.

The relative figure for enlisted medical nurses was enrolled attendants (level 1) 18.2 %. More senior enrolled nurture positions were identified with length of administration with half of enlisted attendants at levels 3, 4 and 5 being in nursing more than 25 years. 20% of respondents detailed having in excess of one occupation. Less senior medical caretakers at enrolled nurture (level 3) or more had in excess of one employment and the ones that did, had a tendency to have work outside of nursing. In correlation, 66% of the right hand in nursing to enrolled nurture (level 2) who had a moment work did as such in nursing.

Table:1;2;3

Table 1: Sex of the respondent			
Sex	n	%	Valid %*
Male	15	9.26	10.5
Female	140	86.42	89.5
Missing	7	4.32	
Total	162	100	100

Table 2: Age of the respondent				
Sex	n	Minimum	Maximum	Mean
Male	15	21.00	60	51
Female	140	19.00	55	46.5
Missing	7	0.00		
Total	162	19	55	46.5

Table 3: Age of the respondent						
Sex		<25	25-34	35-44	45-54	55-60
Male	Count	5.00	1.00	1.00	0.00	0.00
	% within age groups	3.09	0.62	0.62	0.00	0.00
Female	Count	15.00	78.00	32	10.00	10.00
	% within age groups	9.26	55.00	46.5	6.17	6.17
Total	Count	20.00	79.00	33.00	10.00	10.00
	% within age groups	12.35	48.76	20.37	6.17	6.17

ACCESS AND USE OF INFORMATION TECHNOLOGY

Level of experience and confidence in use of information technology:

The experience and trust in utilizing a wide assortment of data innovation equipment and programming applications was resolved. General outcomes are appeared in table 4.

Table 4: Experience and confidence of using computer technology		
	N	%
Computer	142	87.65
Internet	140	86.42
Email	140	86.42
Spread sheet	30	18.52
Practice	120	74.07

The use of computer technology among the nurses of Allied Hospital Faisalabad. is 87.65%. Most of the nursing staff use internet(86.42%). Almost all the nursing staff have their email address to communicate with the employer, patients and the administration of the hospital.. It is noted that fewer nurses were using the spreadsheet to manage their work in the respective departments. 74.02 % nurses have attended the departmental training to enhance their efficiency in the computer technology.

Table 4: Experience and confidence of using computer technology

Access to computers:

There were 162 respondents who showed they utilized a computer for business related exercises. A large portion of the respondents utilized their own work computer. The most elevated computer utilizes for business related exercises was work computers where 87.65 % . Little access was made through libraries or web bistros. Medical caretakers who had their own work computer were more seasoned than the individuals who did not and nurture who shared a work computer were more youthful than the individuals who did not. The recurrence of computer utilize was likewise identified with age, with more youthful medical caretakers

utilizing a common computer more much of the time than more established attendants. 24.69 % nurses used home computer to assist their work and health care of patients. 18.52 % nurses used library computer to assist their work and health care of patients. 74.06 % nurses use computer technology to at home for assisting the clinical care. 86. 42 % nurses used home computer for assisting patients.

Table: 5;6;7

Table 5: Main role in nursing			
	N	%	Valid %*
Career	90	55.56	58
Clinician	40	24.69	25
Educator	12	7.41	9
Manager	4	2.47	5
Researcher	1	0.62	3
Total	162	90.74	100

Table 6: Proportion of respondents using computer		
	N	%
Home	40	24.69
Internet	140	86.42
Work Computer	142	87.65
Library	30	18.52
Other	120	74.07

Table 7: Use of home computer		
	N	%
Research	1	0.62
Communication	120	74.07
Clinical care	140	86.42
Patient	140	86.42
Other	12	7.41

DISCUSSION

Survey reactions:

The general reaction rate was 44%. The study was protracted and this high reaction rate proposes this point is one which is vital to medical attendants. The second mail out brought about 15% of the total 44% return and exhibited the estimation of this approach. The quantity of reactions will allow extra future

investigation both inside and among wards. The huge reaction rate took into consideration intense investigation by Australian Standard Geographical Classification and by age, time allotment in nursing and level of position. In any case, it ought to be noticed that by picking. In a perfect world a 25% reaction from every one of the four topographical areas ought to have been accomplished. This was not exactly accomplished, however deviation from 25% was under 3% for all zones and the information give a dependable portrayal of the four areas.

Experience and trust being used of data innovation

The main particular inquiry concerning data innovation in the overview (Q17) requested that respondents depict their involvement with, and level of trust in, utilizing 19 unique bits of equipment and programming applications. Every one of the applications could be delegated general instruments as opposed to wellbeing industry particular applications.

The point of the inquiry was to give a general outline of the respondents' data innovation utilize, a supposition being that trust being used is firmly related with presentation to and recurrence of utilization. Having any involvement being used gone from not as much as half of the respondents for Apple working frameworks to just about 100% for computers by and large. In a portion of the more particular applications, for example, the utilization of spreadsheets and databases, it isn't astounding that experience was low. Of course, for most equipment and programming segments there were additionally clear contrasts accordingly identified with level of position. The little contrasts in the distinction in age was 2-7 years over the applications.

The period of time in nursing was additionally considered, as statistic information had demonstrated that numerous more seasoned medical attendants were taint new to nursing.

Information were not gathered on instructive foundation or earlier work involvement outside of nursing. In any case, as involvement in the data innovation applications was adversely identified with the time span in nursing, this proposes more up to date nurture who as a gathering had as of late embraced college training had more introduction to data innovation. Involvement being used of utilizations crosswise over various work segments demonstrated some significant patterns. Attendants in matured care all in all had less involvement in the utilization of uses. Medical caretakers working in private matured care showed an even lower level of experience utilizing data innovation despite the fact that the attendants in that segment who do have encounter tend have more trust being used than attendants working in general society division.

Applications for which there was low involvement being used likewise had a tendency to have low trust being used among the attendants who had understanding. For essentially all applications both more youthful and more up to date nurture communicated more prominent certainty. The mean age between exceptionally certain and not sure for PC use by age was 8 years. Contrasts in involvement and trust being used was obvious for most applications by level of attendant. A noteworthy finding was that the general certainty of the most sure medical caretakers in the most commonplace of utilizations just barely surpassed sure (a rating of 2).

This was the primary sign that introduction to applications by attendants was not as high as maybe is attractive. Sex and age consequences for reactions about certainty could be impacting the outcomes, however this is past the extent of this report. Facilitate examinations could be embraced to determine if these are an impact. There is along these lines a blended impact in certainty of attendants and in involvement with the applications. When all is said in done

medical attendants who have spent less years in nursing are more experienced and certain with data innovation apparently because of later college instruction giving extra preparing in data innovation. Be that as it may, crosswise over position levels the more senior enrolled medical caretakers (levels 3-5) are both more experienced and certain than attendants at the more junior levels.

This impact is well on the way to be because of the expansive number of less senior medical caretakers (enlisted nurture and enrolled nurture at level 1) who have been in nursing quite a while. A fundamental suspicion of this investigation is that the utilization of data innovation in nursing will keep on increasing. Proposals coming about because of the information investigation have been influenced accepting that in future there was a necessity for medical caretakers to have abnormal state abilities in the utilization of data innovation. Generally speaking the reaction to this inquiry on certainty represented that despite the fact that more current medical caretakers are more comfortable with data innovation, probably to some extent due to their introduction to and utilization of data innovation amid their instruction, there is expansive opportunity to get better if attendants are to completely use data innovation in their working environment.

Having discovered understanding and certainty both all through the working environment the last couple of inquiries in the segment on foundation took a gander at whether PCs were utilized at all by respondents for work and on the off chance that they were utilized what were the medical caretakers' dispositions to utilize. Just 13.7% of medical attendants expressed they didn't utilize a PC by any stretch of the imagination, paying little heed to area, for business related purposes. This outcome strengthened the presumption of a high take-up of data innovation in the work environment, especially in remote territories where under 7%

of respondents did not utilize a PC. In any case, there was generously less PC use in the matured care and private parts and even and no more senior levels of medical caretaker just about 20% of the attendants working in matured care did not utilize a PC by any stretch of the imagination.

Additionally research ought to be embraced to assess the effect on the standard of care and cost-viability of an expansion in PC use in these areas, especially the matured care part which has a broad revealing prerequisite to the Australian Government. Access to PCs About 85% of medical attendants utilized a PC at work and right around 75% of those utilized their home PC sooner or later for work purposes. The more senior enlisted attendants (levels 3-5) seem to have a more noteworthy need to utilize home PCs for work purposes. Also, nurture in remote and extremely remote regions have a higher utilization of home PCs than in different areas. This may mirror the more senior level of attendants in remote and exceptionally remote zones however may likewise mirror that for some, remote zone medical nurses, home and work are firmly connected as they might be available to come back to work 24 hours per day, seven days seven days.

Results recommend that more than half of medical attendants beneath enlisted nurture (level 3) don't have their own particular work PC i.e. a PC at work to which they have sole access. These differences to the 80% of enlisted medical caretakers (level 3) or more who have their own particular work PC. Group well being enrolled medical caretakers (levels 1 and 2) have higher access to PCs than attendants in different segments showing that data innovation is a critical part of their part. Forty-two percent utilize a work PC more than once a day contrasted with under 20% for different areas. Access to the intranet and web Access to neighborhood (LAN) and wide zone systems (WAN) are fundamental to empower quick

exchange of data inside offices and crosswise over associations.

The future utilization of shared assets, for example, electronic well being records will request considerably more prominent between network than exists today. Nearness in the work environment of either an intranet or web was no less than 75% and could be a further 10% higher if the 'don't have the foggiest idea' respondents were incorporated. The individuals who did not know whether their work environment approached systems were more seasoned; however more experienced (and probably more established) enrolled medical caretakers (levels 3-5) were more proficient about the nearness/nonattendance of these frameworks.

CONCLUSION

This investigation of medical nurses and data innovation has obviously distinguished that attendants perceive advantages to embracing more data innovation in the work environment. They are however baffled by impediments of access to the innovation, programming that isn't generally fit for reason, absence of chances for preparing and workload preventing access. The level of utilization of data innovation and data administration frameworks is for the most part low and trust being used is low even among clients. There is confirm that recognition, utilize and trust being used is marginally higher in medical attendants who have late tertiary instruction. Results to a great extent affirm conclusions from littler examinations in Australia and a few bigger abroad investigations.

Attendants feel ineffectively educated about data innovation well being activities and inadequately counseled about their usage. Workload, number of PCs and lacking specialized help are the key obstructions to utilization of data innovation. Specialized help is to a great extent inadequate particularly in more remote areas. Neither the maximum capacity of

data innovation in the arrangement of well being and matured care nor the acknowledgment by medical caretakers that data innovation is a vital piece of nursing was acknowledged until the point when these restrictions are tended to.

REFERENCES

1. Saba V., Skiba D. and Bickford C. 2004. Competencies and credentialing: nursing informatics. In: Hovenga E, Mantas J. Global health informatics education. Amsterdam: IOS Press; 2004. pp.75-89.
2. Nagle L.M. Everything I know about informatics, I didn't learn in nursingschool. Journal of Nursing Leadership. 2007; 20(3): 22-5.
3. Staggers N., Gassert C. and Curran C. 2002. A Delphi study to determine informatics competencies for nurses at four levels of practice. Nursing Research. 2002; 51(6):383-390.
4. Maag M. The potential use of "blogs" in nursing education. Computers, Informatics, Nursing CIN. 2005; 23(1): 16-24.
5. Lau F, Hagens S., & Muttitt S. A proposed benefits evaluation framework for health information systems in Canada. Healthcare Quarterly. 2007; 10(1): 112-6, 118. Available from <http://www.ncbi.nlm.nih.gov/pubmed/17326376>
6. Davis F.D., Bagozzi R.P. & Warshaw P.R. User acceptance of computer technology: A comparison of two theoretical models. Management Science. 1989; 35(8): 982-1003. doi:10.1287/mnsc.35.8.982

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Robina Kousar		
2	Shafquat Inayat	review the paper, Statistical analysis	