

Assessment of Basic Computer Skills Among Health Workers in Rural Health Unit in Lanao Del Sur: An Implication for an Increased Use of Information Technology in Service Delivery

Sittie Mairah Hadji Omar Ali*

Graduate Student, Mindanao State University-Main Campus, Marawi City, Philippines

Abstract: The advent of information technology has improved the delivery of healthcare worldwide especially in disease control, patient management, and health data analysis. However, access and knowledge in computer is a major problem to various digital health initiatives among health professionals. The aim of this study was, to assess health workers' basic computer skills such as (a) the ability to use Microsoft window, (b) the ability to use Microsoft word, (c) The ability to navigate the Internet for research and e-mail and (d) the ability to use spreadsheet software (most commonly Microsoft Excel); And to identify if there are specific deficiencies that require training to help them function effectively. Lastly, to be able to identify if there is an association between demographic profiles and basic computer skills. The method utilized in this study is a cross-sectional study design to assess basic computer skills and frequency of using computer programs among health workers in Rural Health Unit using a standard survey questionnaire. The major findings sought that most of the respondents had adequate basic computer skills, of which 69.1% were nurses, 29.1% were midwives and only 1.8% were medical technologist. Moreover, health workers in the rural health unit may not need to be trained on basic computer skills, thus an implication had also been disclosed that there is an increased use of information technology in service delivery in Rural Health Units.

Keywords: computer, health workers, information technology, Microsoft.

1. Introduction

Recent technological advancements have drastically changed how care providers manage data and deliver services. The advent of technology has improved the delivery of health care world-wide especially in disease control, patient management, and health data analysis. However, access to infrastructure like computers and knowledge of Information and communication technology is a major problem to various digital health initiatives among health professionals.

In today's world the potential for information and communication technology application is increasing so that it can enhance the quality of nursing domains outcome. Healthcare providers have the most communication with patients and interact with technology more frequently. The

advancement of information and communication technology has made it possible to improve health through e-education regardless of time or location.

Internet-based patient education systems can improve patient satisfaction and encourage self-care behavior. People become more conscious of disease management because of e-health training initiatives, which improve cooperation with the health-care team. Wherein it has an impact on lifestyle and illness prevention, such as cardiovascular diseases as one of the leading causes of death, vaccine-preventable diseases, and other diseases. On the other hand, it also strengthens and updates the knowledge of health workers. In this time of pandemic, telehealth services have been increasingly leveraged to provide a variety of healthcare services to minimize physical contact for non-emergencies, such as primary care visits, and expand the reach of health workers to underserved communities.

Basic computer skills can help health workers efficiently collect data, perform basic analysis, store, and disseminate health-related information. Health workers can assess trends of diseases and, also routinely assess the performance of child health indicators including neonatal mortality rate, immunization uptake rates, and incidence of communicable and non-communicable diseases over a period.

Knowledge on Information technology and access to computer is a vital problem in Health care delivery. Hence, this study was formulated to know how computer literate the health workers assigned in a Rural Health Unit.

Most of the studies assessing healthcare workers' computer skills and use of social media have focused on knowledge, use, and attitude. There is no study was found to assess the skills of health workers in specific computer skills. Also, only a few studies were found to have conducted their research on multiple sites. Thus, this study was conducted to address these gaps in the literature.

The aim of this study was, therefore, to assess health workers' basic computer skills and identify specific deficiencies that require training to help them function effectively. And to determine if there is an association between profession and

*Corresponding author: simplymyrut15@gmail.com

years working at a health facility, and basic computer skills.

2. Objectives of the Study

The objectives of this study were the following:

- a) To be able to assess the basic computer skills of Health Workers working in Rural Health Unit such as the following:
 - 1) the ability to use Microsoft window;
 - 2) the ability to use Microsoft word;
 - 3) the ability to navigate the Internet for research and e-mail and;
 - 4) the ability to use spread sheet software (most commonly Microsoft Excel);
- b) To be able to identify specific deficiencies that require training in order to help them function effectively.
- c) To be able to determine if there is a correlation between demographic profile and basic computer skills.

3. Methodology

A. Research Design

A cross-sectional study design was utilized in this research to assess basic computer skills among health workers in Rural Health Unit of Lanao del Sur. The variables considered were the demographic profile of the respondents which include: gender, age, educational attainment, profession and years worked at the facility, ownership of a laptop or computer, access to internet or WIFI, access to desktop at the office and the assessment of basic computer skills.

B. Research Locale

This study was conducted in a selected Rural Health Unit (RHU) facility in Lanao Del Sur province in the Philippines which is under the supervision of the Integrated Provincial Health Office, a leading Government health office in Lanao del Sur mandated for designing, planning, implementing, and coordinating policies and programs.

C. Respondents of the Study

The respondents of this study were the 55 health workers assigned in the 39 Rural Health Unit facilities in the province of Lanao del Sur, Philippines. This number of respondents excluded those who were on maternity or annual sick leave. Health Workers were defined as people with a form of clinical training who worked in the health centers including community health workers, medical technologist, and nurse- midwives.

D. Sampling

In this study, stratified random sampling was used in selecting health workers assigned in Rural Health Unit of Lanao del Sur. The Cochran formula was used to compute the sample size required in this study statistically. Convenience sampling was also utilized in this study.

E. Research Instrument

The researcher used a standard survey questionnaire using Likert Scale which served as a main tool in data gathering. A

survey questionnaire was divided in to two (2) parts; The first part focused on the respondent's demographic profile that contains the information such as gender, age, educational attainment, profession, years worked at the facility, ownership of a laptop or computer, access to internet or WIFI, access to desktop at the office. Whereas the second part of the questionnaire comprised of questions on basic computer skills assessment.

F. Data Gathering

Prior to commencement of the main data collection, initial information seeking was done to know the respondents, population and other relevant initial information needed. The researcher asked permission from the respondents when the permission was granted, and the online assessment was sent via email or through Facebook. The questionnaires given are in its simplest form for clarity purposes and to prevent confusion towards the respondents that might interfere on the result.

Questionnaires contained the information about the respondents 'profile, and questions for the researchers' data. The respondents were given proper instruction to assure proper understanding and gave them ample of time to finish answering the questionnaire. The researcher accommodated clarifications about the questionnaires.

G. Ethical Considerations

The respondents of this study are protected by securing informed consent, the Right to privacy, maintaining the confidentiality and anonymity of respondents. Signed individual informed Consent was obtained from each participant after they Reviewed information sheets provided by the researcher. Information sheets included Details on study objectives, procedures, and possible outcomes of the study. Participants had the right to withdraw from the study at any time during data Collection without any consequences. Questionnaires retrieved from the study and Soft copies of entered data are stored in strict confidence.

H. Data analysis

The study utilized the IBM Statistical Package for Social Science (SPSS) 26 to perform the statistical analysis of data. Descriptive statistics like frequency, percentage, mean, standard deviation was applied to report the respondent's demographic profiles and basic computer skills. Whereas Pearson Product correlation coefficient was used to test the correlation between demographic profile and basic computer skills.

4. Results and Discussion

A. Demographic profile of rural health unit health worker respondents

Based on the data descriptive statistical analysis result, with a total of 55 respondents, it was found out that the rural health unit health worker respondents' gender were female which accounts for 98.2%, while the majority of respondents 'age ranges from 31-35 years old (52.8%). All the respondents were college graduate (100%). Majority of the respondents'

Table 1
Demographic profile of rural health unit health worker respondents

Variables		Frequency	Percentage
Gender	Female	54	98.2%
Age	31-35 years old	29	52.8%
Educational Attainments	College Graduate	55	100%
Profession	Nurses	38	69.1%
Years worked at the Facility	1-3 years	24	43.7%
Ownership of Laptop or Computer	Yes	34	61.8%
Access to internet or WIFI	Yes	51	92.7%
Access to Desktop at the Office	yes	52	94.5%

Table 3
Correlation between demographic profile and basic computer skills

Demographic Profile and Basic Computer Skills	Correlation Value	Computed p-value	Analysis of v-value
Age	.670**	.000	High Correlation
Profession	.431**	.001	High Correlation
Years worked at the Facility	.482**	.000	High Correlation
Ownership of Laptop or Computer	-.276*	.041	Moderate Correlation
Access to internet or WIFI	-.471**	.000	High Correlation

NS- not significant ($p \geq 0.05$)

Correlation is significant at the $*p \leq 0.05$, 0.01 (2 tailed)

profession were nurses (69.1%). Most of the respondents' said they have been in service in the facility for more than 1 to 3 years (43.7%). Respondents who own a laptop or computer were (61.8%). Almost of the respondents have access to internet or WIFI (92.7%), while access to desktop at the office accounts 94.5%. Demographic profile of rural health unit health worker respondents was shown in Table 1.

B. Basic computer skills assessment of rural health unit health worker respondents

In summary, the findings of the study revealed that rural health unit health worker respondents assessed their basic computer skills was found out to be interpreted as 'always' in the scaling with a mean of 1.29 and a standard deviation of ± 0.67 . Hence, rural health unit health worker respondents' assessment on basic computer skills were adequate with an implication that there is an increased use of information technology in delivering services in rural areas of Lanao del sur. Specifically, the rural health workers ability to perform general windows were interpreted 'always' with a mean of 1.13 and standard deviation of ± 0.375 , Microsoft word (1.17 ± 0.772), internet or e-mail (1.50 ± 1.033), and excel spreadsheet (1.29 ± 0.67). Thus, the result implies that there is an increased use of information technology in rural health unit. Basic computer skills assessment of rural health unit health worker was shown in Table 2.

Table 2
Basic computer skills assessment of rural health worker respondents

	Mean	Std. deviation	Interpretation
General windows- I Can	1.13	.375	always
Microsoft Word – I Can	1.17	0.772	Always
Internet or e-mail – I Can	1.50	1.033	Always
Excel spread sheet- I can	1.35	0.518	always
Total	1.29	0.67	always

*Scale:

Always = 1.0- 1.7

Sometimes = 2-1.8-2.4

Not at all = 2.5-3.1

C. Correlation between demographic profile and basic computer skills

Pearson product moment correlation coefficient revealed that

there is statistically significant relationship to basic computer skills in the following: a) age ($r=.670^{**}$, $p=.000$), b) profession ($r=.431^{**}$, $p=.001$), c) Years worked at the facility ($r=.482^{**}$, $p=.000$), d) Access to internet/WIFI ($r=-.276^{*}$, $p=.041$), and e) Access to desktop at the office ($r=-.471^{**}$, $p=.000$).

In general, Table 3 showed that most variables depicts a high correlation between the demographic profile and the basic computer skills. Specifically, study findings revealed a high correlation in the following: a) age ($r=.670^{**}$, $p=.000$), b) profession ($r=.431^{**}$, $p=.001$), c) Years worked at the facility ($r=.482^{**}$, $p=.000$), d) Access to internet/WIFI ($r=-.276^{*}$, $p=.041$). On the contrary the other variables depict moderate correlation. Hence, the findings of study revealed moderate correlation.

5. Conclusion and Recommendation

The study aimed to assess health workers' basic computer skills and identify specific deficiencies that require training to help them function effectively as above. The findings of the study suggest that health workers computer skills and knowledge are relatively high. No specified deficiencies were found. The study found out that there is relationship between the age of the respondents, profession, years worked at the facility, access to internet/WIFI, and access to desktop at the office to the basic computer skills of the respondents. Therefore, health workers in the rural health unit have adequate knowledge and ability in performing basic computer skills with an implication that there is an increased use of information technology in delivering services in rural areas of Lanao del sur.

Based on the findings, as the researcher would like to recommend that the Mindanao State University Main Campus should expand the importance of research to the students as well as the faculty to always be equipped with quality research standards and encourage their students to strengthen their research services emphasizing the importance of research to the students as well as the faculty and administrators in general to uplift higher standard. The researcher would like to recommend that the public should have knowledge regarding the basic computer skills as it is applicable and usable in today's

generation of technology. For the future health workers, the researchers would like to recommend seeking further knowledge and skills on information technology to improve delivery of health care services.

References

- [1] Benefits of Health care Information Technology, CCHIT, December 20, 2015.
- [2] I. S. Belo, F. A. Arogundade, A. A. Sanusi, I.T. Ezeoma, E. A. Abioye-Kuteyi, A. Akinsola, "Knowledge and Utilization of Information Technology Among Health Care Professionals and Students in Ile-Ife, Nigeria: A Case Study of a University Teaching Hospital," in *J Med Internet Res.*, 2004;6(4):e45.
- [3] K. Alwan, T. Awoke, B. Tilahun, "Knowledge and Utilization of Computers Among Health Professionals in a Developing Country: A Cross-Sectional Study," in *JMIR Hum Factors*, 2015;2(1):e4.
- [4] A. McNelis, S. Horton-Deutsch, B. M. Friesth, "Improving quality and safety in graduate education using an electronic student tracking system". *Archives of psychiatric nursing*," in *Arch Psychiatr Nurs.* 2012 Oct;26(5):358-63.
- [5] A. S. Gosling, J. I. Westbrook, "Allied health professionals' use of online evidence: a survey of 790 staff working in the Australian public hospital system," in *Int J Med Inform.* 2004 May;73(4):391-401.
- [6] E. Raja E, R. Mahal, V. B. J. Masih Siht, "Informatics. An exploratory study to assess the computer knowledge, attitude and skill among nurses in healthcare setting of a selected hospital in Ludhiana, Punjab, India," in *Stud Health Technol Inform.*, 2004;107(Pt 2):1304-7.