

Access and Use of Electronic Health Services by the Professional of Medical College in Puducherry: A Study

T. Kavitha, S. Mohamed Esmail and M. Nagarajan

Department of Library and Information Science, Annamalai University, Annamalai Nagar - 608 002,
Tamil Nadu, India

E-mail: kavithavelkumar@gmail.com

(Received on 04 May 2011 and accepted on 31 May 2011)

Abstract

This paper aims at evaluating and analyzing of use of Electronic Health Services by the Professional of Puducherry Medical College. The relevant data were analyzed and assessed by employing interview schedule method from total number of 735 respondents. The aim of the study is to find out in what extent the medical professional uses the latest electronic health service equipment in their profession. This study will be given a clear idea of the health professional in use of electronic equipment.

Keywords: Health Service, Medical College, Use of Electronic Resources

1. INTRODUCTION

The Healthcare industry today faces huge challenges, due to ever increasing demands. Healthcare professionals are under pressure to continually improve the services they offer to care for a growing number of patients - often with inadequate resources.

However, in the healthcare industry, although ICT is widely used, it has still not yet reached its full potential. Part of the reason for this is that healthcare providers are typically more cautious than their counterparts in other industries; a sensible outlook given that they are dealing with human lives. Nevertheless, the enormous challenges facing the healthcare industry are now forcing healthcare providers to seek better efficiencies in an effort to stretch limited funds further and keep up with new medical advancements.

There is compelling evidence to demonstrate that the adoption of health informatics results in improved patient safety and the delivery of a higher level of patient care. When ICT is introduced by healthcare providers, the result is that teamwork improves; information to assist with diagnosis is delivered faster; potential drug interactions and allergies are identified earlier; and health records are maintained more consistently and securely.

2. OBJECTIVES

The following objectives are framed for the purpose of the present study:

- i To identify the Institution-wise respondent's extent of utilization of electronic health services;
- ii To find out the designation-wise respondent's extent of utilization of electronic health services;
- iii To find out the caste-wise respondent's extent of utilization of electronic health services;
- iv To find out the sex-wise respondent's extent of utilization of electronic health services.

3. METHODOLOGY

This study attempts to examine the use of electronic health services by the professionals in Puducherry with reference to Aarupadai Vedu Medical College, Sri Lakshmi Narayana Institute of Medical sciences, Sri Venkateswara Medical College and Vinayaka Missions' Medical College. Puducherry has nine medical colleges and among them, four medical colleges are selected for the purpose of present study, representing a half of the total institutions. The researcher proposed to select 200 respondents from each institution; however, actual reply was received from 735 respondents.

4. LIMITATIONS

The findings of this study are mainly applicable to the faculty members of medical colleges located in Puducherry and not applicable to other college faculty members. Only four institutions were selected for this study since studying of all institutions would be not

possible for an individual researcher, owing to constraints of money, time, energy, and efforts.

5. DATA ANALYSIS AND DISCUSSION

Based on the objectives of the study, the data were analyzed and results are presented below:

Table 1 Institution-wise Respondents' Extent of Utilization of Electronic Health Services

| Electronic Health Services | Aarupadai Veedu Medical College | Sri Lakshmi Narayana Institute of Medical Sciences | Sri Venkateswara Medical College | Vinayaka Missions' Medical College | Total |
|---------------------------------------|---------------------------------|--|----------------------------------|------------------------------------|-------|
| Electronic Patient Records | 3.97 | 4.31 | 3.72 | 2.46 | 3.48 |
| Smart Cards | 3.98 | 4.19 | 3.87 | 2.34 | 3.40 |
| Physician Order Entry in Laboratories | 3.85 | 4.27 | 3.17 | 2.92 | 3.85 |
| Physician Order Entry in Radiology | 3.79 | 4.33 | 3 | 2.65 | 3.86 |
| Physician Order Entry in Therapies | 3.87 | 3.99 | 3.44 | 3.01 | 3.73 |
| Pharmacy and Dispensing | 4.19 | 4.05 | 3.81 | 3.42 | 3.80 |
| Theatre Management | 4.05 | 4.21 | 3.91 | 3.57 | 4.01 |
| Hospital Information Systems | 3.91 | 4.21 | 3.52 | 2.44 | 3.45 |
| Community Information Systems | 3.85 | 4.1 | 3.71 | 3.17 | 3.72 |
| Vaccination and Immunization | 3.59 | 4.12 | 2.98 | 2.11 | 2.74 |
| Health Insurance | 3.98 | 4.22 | 2.77 | 3.15 | 3.62 |
| Disease Surveillance | 3.85 | 4.11 | 3.71 | 3.10 | 3.74 |
| Health Education | 3.89 | 3.11 | 3.58 | 3.59 | 3.39 |
| Telemedicine | 3.42 | 4.11 | 4.20 | 3.98 | 3.89 |
| Telehealth and Home Monitoring | 3.87 | 2.96 | 2.99 | 3.85 | 3.33 |
| Healthcare Supplies and Logistics | 4.10 | 2.52 | 3.96 | 3.89 | 3.78 |
| Patient Administration Systems | 3.98 | 2.77 | 2.99 | 3.42 | 3.70 |
| Billing | 4.05 | 2.76 | 3.89 | 3.87 | 3.61 |
| Financial Management | 4.02 | 2.79 | 3.78 | 4.10 | 3.46 |
| Human Resource Management | 2.52 | 4.10 | 4.26 | 3.98 | 3.60 |
| Total | 3.84 | 3.76 | 3.56 | 3.25 | 3.61 |

Note: Above statistics are given from the mean score of a 5 point rating scale

It could be seen clearly from the above discussion that the respondents rate high level priority towards utilization of electronic health services with respect to theatre management, telemedicine, physician order entry in radiology, physician order entry in laboratories, pharmacy and dispensing, healthcare supplies and logistics, disease surveillance, physician order entry in therapies, community information systems and patient administration systems. The respondents rate moderate

level priority towards utilization of electronic health services with respect to health insurance, billing, human resource management, electronic patient records, financial management, hospital information systems and smart cards. The respondents rate low level priority of utilization of electronic health services towards health education, telehealth and home monitoring and vaccination and immunization system.

Table 2 Designation-wise Respondents' Extent of Utilization of Electronic Health Services

| Variables | Professor | Associate Professor | Assistant Professor | Tutor | Total |
|---------------------------------------|-----------|---------------------|---------------------|-------|-------|
| Electronic Patient Records | 4.22 | 3.01 | 3.79 | 3.94 | 3.48 |
| Smart Cards | 4.22 | 2.8 | 3.85 | 3.78 | 3.40 |
| Physician Order Entry in Laboratories | 4.21 | 3.93 | 3.17 | 3.99 | 3.85 |
| Physician Order Entry in Radiology | 4.5 | 3.98 | 3.92 | 3.32 | 3.86 |
| Physician Order Entry in Therapies | 4.12 | 4.04 | 3.98 | 2.74 | 3.73 |
| Pharmacy and Dispensing | 3.75 | 4 | 3.87 | 3.86 | 3.80 |
| Theatre Management | 4.22 | 4.02 | 3.97 | 3.27 | 4.01 |
| Hospital Information Systems | 4.1 | 2.98 | 3.56 | 3.77 | 3.45 |
| Community Information Systems | 3.98 | 3.48 | 3.77 | 4.2 | 3.72 |
| Vaccination and Immunization | 4.2 | 2.58 | 3.95 | 2.52 | 2.74 |
| Health Insurance | 4.3 | 3.13 | 3.77 | 3.74 | 3.62 |
| Disease Surveillance | 3.71 | 3.1 | 3.85 | 3.21 | 3.74 |
| Health Education | 3.58 | 3.29 | 3.89 | 3.11 | 3.39 |
| Telemedicine | 4.2 | 3.98 | 3.42 | 3.11 | 3.89 |
| Telehealth and Home Monitoring | 3.99 | 3.85 | 3.87 | 2.96 | 3.33 |
| Healthcare Supplies and Logistics | 3.96 | 3.89 | 4.1 | 2.52 | 3.78 |
| Patient Administration Systems | 3.99 | 3.42 | 3.98 | 2.77 | 3.70 |
| Billing | 3.89 | 3.81 | 4.05 | 2.76 | 3.61 |
| Financial Management | 3.78 | 3.1 | 4.02 | 2.79 | 3.46 |
| Human Resource Management | 4.26 | 3.98 | 2.52 | 4.1 | 3.60 |
| Total | 4.06 | 3.52 | 3.77 | 3.32 | 3.61 |

Note: Above statistics are given from the mean score of a 5 point rating scale

Data presented in Table 2 indicates the designation-wise respondents' views on utilization of electronic health services. The professor respondents take the first position with respect to their overall utilization of electronic health services as they secured a mean score of 4.06 on a 5 point rating scale. The assistant professor respondents rank the second position with respect to their overall utilization of electronic health services as they secured a mean score of 3.77 on a 5 point rating scale. The associate professor respondents hold the third position with respect to their overall utilization of electronic

health services as they secured a mean score of 3.52 on a 5 point rating scale. The tutor respondents stand at the last position with respect to their overall utilization of electronic health services as they secured a mean score of 3.32 on a 5 point rating scale. It could be seen clearly from the above discussion that professor respondents take the first position with respect to their overall utilization of electronic health services, assistant professor respondents the second, associate professor respondents the third and the tutor respondents the last.

Table 3 Caste-wise Respondents' Extent of Utilization of Electronic Health Service

| Variables | Forward Caste | Backward Caste | Most Backward Caste | Scheduled Caste | Total |
|---------------------------------------|---------------|----------------|---------------------|-----------------|-------|
| Electronic Patient Records | 4.22 | 3.01 | 3.79 | 3.94 | 3.48 |
| Smart Cards | 4.22 | 2.8 | 3.85 | 3.78 | 3.40 |
| Physician Order Entry in Laboratories | 4.21 | 3.93 | 3.17 | 3.99 | 3.85 |
| Physician Order Entry in Radiology | 4.5 | 3.98 | 3.92 | 3.32 | 3.86 |
| Physician Order Entry in Therapies | 4.12 | 4.04 | 3.98 | 2.74 | 3.73 |
| Pharmacy and Dispensing | 3.75 | 4 | 3.87 | 3.86 | 3.80 |
| Theatre Management | 4.22 | 4.02 | 3.97 | 3.27 | 4.01 |
| Hospital Information Systems | 4.1 | 2.98 | 3.56 | 3.77 | 3.45 |
| Community Information Systems | 3.77 | 3.98 | 3.48 | 4.2 | 3.72 |
| Vaccination and Immunization | 3.95 | 4.2 | 2.58 | 2.52 | 2.74 |
| Health Insurance | 3.77 | 4.3 | 3.13 | 3.74 | 3.62 |
| Disease Surveillance | 3.85 | 3.71 | 3.1 | 3.21 | 3.74 |
| Health Education | 3.89 | 3.58 | 3.29 | 3.11 | 3.39 |
| Telemedicine | 3.42 | 4.2 | 3.98 | 3.11 | 3.89 |
| Telehealth and Home Monitoring | 3.87 | 3.99 | 3.85 | 2.96 | 3.33 |
| Healthcare Supplies and Logistics | 4.1 | 3.96 | 3.89 | 2.52 | 3.78 |
| Patient Administration Systems | 3.98 | 3.99 | 3.42 | 2.77 | 3.70 |
| Billing | 4.05 | 3.89 | 3.81 | 2.76 | 3.61 |
| Financial Management | 4.02 | 3.78 | 3.1 | 2.79 | 3.46 |
| Human Resource Management | 2.52 | 4.26 | 3.98 | 4.1 | 3.60 |
| Total | 3.93 | 3.83 | 3.59 | 3.32 | 3.61 |

Note: Above statistics are given from the mean score of a 5 point rating scale

Data presented in Table 3 indicates the caste-wise respondents' views on utilization of electronic health services. The forward caste respondents take the first position with respect to their overall utilization of electronic health services as they secured a mean score of 3.93 on a 5 point rating scale. The backward caste respondents rank the second position with respect to their overall utilization of electronic health services as they secured a mean score of 3.83 on a 5 point rating scale. The most backward caste respondents hold the third position with respect to their overall utilization of electronic health services as they secured a mean score of 3.59 on a 5

point rating scale. The scheduled caste respondents stand at the last position with respect to their overall utilization of electronic health services as they secured a mean score of 3.32 on a 5 point rating scale.

It could be seen clearly from the above discussion that forward caste respondents take the first position with respect to their overall utilization of electronic health services, backward caste respondents the second, most backward caste respondents the third and the scheduled caste respondents the last.

Table 4 Sex-wise Respondents' Extent of Utilization of Electronic Health Service

| Variables | Male | Female | Total |
|---------------------------------------|------|--------|-------|
| Electronic Patient Records | 3.01 | 3.95 | 3.48 |
| Smart Cards | 4 | 2.8 | 3.40 |
| Physician Order Entry in Laboratories | 3.93 | 3.77 | 3.85 |
| Physician Order Entry in Radiology | 3.98 | 3.74 | 3.86 |
| Physician Order Entry in Therapies | 4.04 | 3.42 | 3.73 |
| Pharmacy and Dispensing | 4.2 | 3.39 | 3.80 |
| Theatre Management | 4.02 | 3.98 | 4.01 |
| Hospital Information Systems | 2.98 | 2.98 | 3.45 |
| Community Information Systems | 3.48 | 3.96 | 3.72 |
| Vaccination and Immunization | 2.58 | 3.56 | 2.74 |
| Health Insurance | 3.13 | 4.11 | 3.62 |
| Disease Surveillance | 3.96 | 2.89 | 3.74 |
| Health Education | 4.05 | 2.79 | 3.39 |
| Telemedicine | 3.89 | 2.11 | 3.89 |
| Telehealth and Home Monitoring | 4.26 | 3.44 | 3.33 |
| Healthcare Supplies and Logistics | 4.01 | 2.22 | 3.78 |
| Patient Administration Systems | 4.08 | 2.27 | 3.70 |
| Billing | 3.98 | 2.16 | 3.61 |
| Financial Management | 3.99 | 2.27 | 3.46 |
| Human Resource Management | 3.91 | 2.56 | 3.60 |
| Total | 3.77 | 3.12 | 3.61 |

Note: Above statistics are given from the mean score of a 5 point rating scale

Data presented in Table 4 indicates the sex-wise respondents' views on utilization of electronic health services. The male respondents take the first position with respect to their overall utilization of electronic health services as they secured a mean score of 3.77 on a 5 point rating scale. The female respondents rank the second position with respect to their overall utilization of electronic health services as they secured a mean score of 3.12 on a 5 point rating scale.

It could be seen clearly from the above table that female respondents lag behind the male respondents with respect to their overall utilization of electronic health services, except health insurance.

6. FINDINGS

- i The respondents rate high level priority towards utilization of electronic health services with respect to theatre management, telemedicine, physician order entry in radiology, physician order entry in laboratories, pharmacy and dispensing, healthcare supplies and logistics, disease surveillance, physician order entry in therapies, community information systems and patient administration systems.
- ii The professor respondents take the first position with respect to their overall utilization of electronic health services, assistant professor respondents the second, associate professor respondents the third and the tutor respondents the last.

- iii The forward caste respondents take the first position with respect to their overall utilization of electronic health services, backward caste respondents the second, most backward caste respondents the third and the scheduled caste respondents the last.
- iv The female respondents lag behind the male respondents with respect to their over all utilization of electronic health services.

7. CONCLUSION

Healthcare is a labor-intensive industry, with human resources being the most important component in the provision of healthcare services. However, the sector is severely under-resourced due to a global skills shortage. The increase in demand for healthcare services has made the recruiting and retaining of experienced and qualified staff a priority for healthcare organizations. This situation is expected to worsen as the first baby boomers begin to retire and the population continues to age. From the study it is concluded that the experienced staff have sufficient skills to use the various electronic health service equipment. And it is also suggested to the institutions to promote the awareness among the youngsters to use various electronic health service equipments through the senior and experienced staff.

REFERENCES

- [1] S.M. Albert, B.A, Ditkoff, J. Fogel, A.I. Neugut and F. Schnabel, " Internet Use and Social Support in Women with Breast Cancer", *Health Psychology*, Vol.21, No.4, 2002, pp. 398-404.
- [2] M.A. Anwar and T.S. Eisenchitz, "Information Needs and Information Seeking Behaviour of Agricultural Scientists in Malaysia", *Library and Information Science Research*, Vol.22, No.2, pp. 145-163.
- [3] N. Belkin, "Anomalous States of Knowledge as the Basis of Information Retrieval", *Canadian Journal of Information Science*, Vol.5, 1980, pp. 133-143.
- [4] N.J. Belkin, H.M. Brooks, R.N. Oddy, "Ask for Information Retrieval", *Journal of Documentation*, Vol.38, 1982, pp. 61-71.
- [5] The World Health Report, "A Safer Future: Global Public Health Security in the 21st Century", World Health Organization, 2007.
- [6] P. Brophy, "Networking in British Academic Libraries", *British Journal of Academic Librarianship*, Vol.8, No.1, 1993, pp. 49-60.