Effects of information technology system in public sector hospital in Faisalabad

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Abstract— Information Technology (IT) has the significant potential to support the improving access to care, and rationalizing working efficiencies in the health care system. It is a secure and confidential electronic system and can be used in hospitals to increase the quality and making care cost effective. The purpose of this study is to see the effects of information technology in public sector health facilities in Faisalabad. Cross sectional study design was used. Data was collected from 254 respondents selected from Allied Hospital Faisalabad. Simple convenient sampling method was used. Research tool was questionnaire. Each question of study was analyzed. For the most part information technology has great impact on quality of work, efficacy of care and documentation in the Allied Hospital Faisalabad. Result of the study was accepting alternative hypothesis and rejects the null hypothesis. Alternative hypothesis was that information technology has effects on public sector hospital in Faisalabad. In the study results demonstrated nurses are satisfied with the implement information technology and wanted to move on paperless system. It concludes that information technology has improved attendance, records has improved and enhanced quality of work and efficacy of care. This electronic system has made the all the information secure and confidential.

Key words__Information technology,

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INTRODUCTION

THE adaptation and usage of information technology (IT) has increased massively through the last decade. It has a significant role in increasing an organization's performance. Many countries are entering their health settings into unprecedented change. The trend of IT is very stronger in developed countries. In the developing countries the trend of IT is also taking its place in hospital settings. In Pakistan, efforts are made to improve the health services with the usage of information technology. Sulaiman and Wickramasingh [1] have directed that an appropriate information technology governance organization is necessary in public health care sectors to better accomplish IT acquisition, arrangement and service. For this purpose, in Allied hospital Faisalabad little efforts have been made to improve health care system through information technology. These efforts include biometric attendance system, electronic health records (EHRs), personal health record (PHR), health information exchange (HIE), cardiac monitors etc.

The application of biometric attendance system help individuals to give in time attendance by thumb impression [2]. As per Cayen [2] the performance of this method is adequate and can be fully implemented because it takes short time for execution and generation of reports. This system is further connected to computers. In host computers, proper attendance record is maintained for payroll management [3].

EHRs are complete electronic information of person's health status in present, past and future. Cline and Luiz [4] provided motivation to reduce the complications of paper based system, improve the management of patient related data and provision of efficient care. Record maintenance of Personal health records is maintained in information technology department. The health information exchange is a new system used in health institutes. Now with the use of this new system health information can be exchange quickly with other departments. Cardiac monitors are necessary part of health care departments. These are used for continuous monitoring of heart activity, mainly by electrocardiography, assessing patient's condition according to carding rhythm. All of the above mentioned information technology systems have great effect on the quality, cost, efficacy and productivity of hospitals. The purpose of this study is to see the effects of information technology in public sector hospital in Faisalabad.

MATERIAL AND METHOD

The design of study was descriptive cross sectional study. Research tool was questionnaire based on close ended questions. Target population was nurses of Allied Hospital Faisalabad. Sample size was 254 respondents. Convenient sampling technique was used for this study.

DISCUSSION

The objective of this study was to see the effects of information technology system in public hospital of Faisalabad. The after-reffects of this study are that 89.4% nurses assess that the attendance of employees has improved by using biometric system of attendance and 10.6% nurses do not assess that the attendance of employees has improved by using biometric system of attendance. As per Cayen [2] the performance of this method is acceptable because it is useful to determine the attendance of employees on their duty and helpful to improve attendance of employees.66.5% nurses believe the application of information technology will save the hospital money and 33.5% nurses do not believe the application of information technology will save the hospital money. Hillestad et al. [5] has indicated that productivity of hospital system can save near about $371 billion in fifteen years.67.3% nurses have confidence that information is more secure and confidential in electronic system as compared to paper and 32.7%nurses do not have confidence that information is more secure and confidential in electronic system compared to paper. Loomis, Ries, Saywell Jr, and Thakker [6] have argued that they have found secure level of electronic records is 54.5% and confidentiality level is 62.5%. The results indicated that effects of IT on the quality of work are minimmum as compared to the results of

other countries because IT system is not fully integrated in all departments of the hospital.

68.5% nurses think that the patients overall satisfaction with care received is higher with the use of IT and 31.5% nurses do not think that the patients overall satisfaction with care received is higher with the use of IT. As per Hsu et al. [7] Information technology has positive effects on the outcome of care and enhanced the patient's satisfaction with care.75.2% nurses think cardiac monitors improved the quality and efficacy of care while 24.8% nurses do not think cardiac monitors improved the quality and efficacy of care.Tolabi et al. [8] have noticed that 70% of quality and care efficacy and documentation have improved by using cardiac monitors in hospitals.76.4% nurses are content with the implementation of all the above mentioned information technology usage while 23.6%nurses are not content with the implementation of all the above mentioned information technology usage. As per Cline and Luiz [4] 80% nurses are satisfied with information technology as it help to enhance professionalism, confidence and morale. Results showed that overall improvement in efficacy is 74%. This result is somehow better but at minimum level when comparing with the efficacy achieved in developed countries. Miriovsky, Shulman, and Abernethy [9] have presented that 77% efficacy of care is obtained by using health information technology.

70.9% nurses think that the EHR benefits over the paper based record and 29.1%nurses do not think that the EHR benefits over the paper based record. A study indicated that the EHRs are important to provide financial support and increase the performance of hospitals over the paper based record [10]. 68.1% nurses are agree that they can easily access patients health related data by using their Personal Health Records (PHRs) in computers and 31.9% nurses do not approve that they can't easily access patients health related data by using their PHRs in computers. As indicated by Tang, Ash, Bates, Overhage, and Sands [11] PHRs helps medical caretakers and patients to actively access health records and help them to actively participate in care.

68.5% nurses think Electronic Health Records have reduced the duplication of information and 31.5%nurses do not think Electronic Health Records have reduced the duplication of information. Dammers [12] indicated that the avoidance of duplication of information offers an approximate justification for records.22.8%nurses think patient's information is more disorganized with the computer system compared to the paper system and 77.2%nurses do not think patient's information is more disorganized with the computer system compared to the paper system. As directed by Dammers [12] information is more secure on computers rather than paper work. Results have shown that 59% effects of IT have seen on documentation and this result is very low.Tolabi et al. [8] have stated that information technology has 70% effects on daily documentation of nurses.

CONCLUSION

This study observed the effects of information technology system on the quality of work, efficacy of care and documentation in Allied hospital Faisalabad. Respondents showed a positive impact of computerization in relations to quality and efficacy with regard to workflow enhancement of nurses, increasing the confidence, morale and efficiency of nurses; and experience of patients. It is concluded that information technology has improved the attendance of employees and it is cost effective over paper based system. It has also improved nursing documentation and reduced the duplication of documentation. Results have shown that information technology is playing an important role in hospitals but in term of quality, efficacy and documentation. But in allied hospital it has not shown too good percentage because all departments are partially integrated with information technology. In addition to, not only one department but all departments of hospitals should be compiled with this system to enhance the quality, care efficacy and documentation. However, there is constantly a room for improvement.

RECOMMENDATIONS

➢ Increase the usage of information technology in those departments, where its implementation is not started.
➢ Developing value for the user group and providing support and encouragement.

LIMITATION

Study conducted in only one hospital.
Time is very short

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