An Attitudinal Study Of Hospital Administrators And Physicians Towards Hospital Information System

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Abstract:

Information and communication technology tools are perhaps the most rapidly growing segments of the world ecosystem. Over the past two decades, there has been a remarkable increase in the use of information technology in service organizations and has fundamentally changed the way many people work and think. IT has touched a new pinnacle and now it is not confined to developed countries. Developing countries such as India have kept pace with the world in modern technology. Healthcare professionals can no longer ignore the application of information technology; many healthcare professionals do not realize how Information technology has revolutionized the way medicine is practiced and how healthcare information is documented, archived and retrieved at the point of care. The present study is exploratory in nature which focuses on the attitude of hospital administrators and physicians towards hospital information system. The Participants included administrators, assistant administrators and physicians. The primary data is collected through questionnaire and analyzed by logical analysis. The study is largely descriptive and categorized as a non-experimental qualitative study. The respondents were using computers in both professional, personal life with extensive acceptance and use of other application packages apart from HIS. When they were questioned regarding the benefits of HIS they listed out core benefits , liked the features such as electronic reporting system, performing group and individual tasks, user friendly character and decision making.

Keywords: Information Technology, Healthcare, Hospital Administrators, Physicians

Introduction

Information and communication technology tools are perhaps the most rapidly growing segments of the world ecosystem. The development in the sector permeates every human activity; social, economic, cultural, religious, political and healthcare (Idowu P et al, 2008). Over the past two decades, there has been a remarkable increase in the use of information technology in service organizations. As this phenomenon is often cited as a driver of both economy-wide productivity growth, changes in wage and salary prospective (Susan Athey and Scott Stern, 2002).Information technology has fundamentally changed the way that many people work and think. Over the years, technology has touched a new pinnacle and now it is not confined to developed countries. Developing countries such as India have kept pace with the world in modern technology. Healthcare professionals can no longer ignore the application of information technology in a broader spectrum (Neeraj Gour & Dhiraj Srivastava, 2010).

Despite the growth of information technology in healthcare most operations and clinical encounters are still documented on paper based system; this may lead to disorganization, illegibility and inaccurate entries and sometimes loss of files (James L. Rogers and Olga M.Haring, 1979).The traditional paper based system is still used in many healthcare setups due to its familiarity to users, portability, ease of recording "soft" or "subjective" findings and its brows-ability. There is also a sense of ownership in paper based system, due to their being a copy, which increases the sense of security. (Richard S. Dick et.al (1991), William R. Hersh (1995)) . Many healthcare professionals do not realize how Information and Communication technology has revolutionized the way medicine is practiced and how healthcare information is documented, archived and retrieved at the point of care. While information technology is facing challenges of adoption, communication technology is striving to create health information exchanges for connecting providers within multiple organizational environments and across disparate geographical boundaries, using secure and fail-safe internet connectivity for high speed data, voice and video communication (Dr. Ajit K. Nagpal).According to the report published by Fierce Healthcare 2011 that talks about Global Hospital Information Systems Market is forecast to grow at a Compound Annual Growth Rate of 10% from 2010-2017 i.e. It was valued at US$7.4 billion in 2010, and is forecast to grow at a Compound Annual Growth Rate of 10% to reach about US$14.7 billion by 2017. The high growth forecast for the period 2010-2017 is significantly influenced by accelerated

efforts from the public and private sectors around the world to contain rising healthcare costs and enhance quality of care (Fierce healthcare, 2011)

Hospital Information System is one of the most common computer systems designed to support health care services. These systems have large computerized data bases which are intended primarily for communication, store health and administrative information. HIS has a different components that includes broad scope with various level of systems from departmental (a system limited a specific clinical or financial domain) to knowledge based systems that provide diagnostic support and intervention for patient care activities (Al-Nashmi and Maha Eissa, 2003). The enormous investments in Information Technology, the question of payoffs from IT has become increasingly important. Organizations continue to question the benefits from IT investments especially in conjunction with corporate initiatives such as business process reengineering (BPR). Furthermore, the impact of technology on nonfinancial outcomes such as customer satisfaction and quality is gaining interest (Sarv Devraj & Rajiv Kohli, 2000).It is evident from various studies that the use of HIS offers tremendous opportunities to reduce clinical errors (e.g. medication errors, diagnostic errors), to support health care professionals (e.g. availability of timely, up-to-date patient information), to increase the efficiency of care (e.g. less waiting times for patients), even to improve the quality of patient care . Thus healthcare professional have to adopt themselves to changing work culture (D.W. Bates et al, 2001).

Methods

The study is exploratory in nature as it focuses on the attitude of hospital administrators and physicians towards hospital information system & use of hospital information system in their work operations. The attitudinal study was carried out at 15 corporate hospitals with a bed capacity of greater than100 serving the population of Hyderabad and Secunderabad. The sample hospitals were selected on the basis of judgment sampling which is using Hospital Information System from at least 3 years. The Participants included 15 administrators, 15 assistant administrators and 50 physicians who offer their services with the hospitals. The primary data was collected through questionnaire and further checked for any deficiency. The data is analyzed by Logical Analysis using graphs and description. The study is largely descriptive and categorized as a non-experimental qualitative study. The study is restricted to hospitals of Hyderabad and Secunderabad.

Discussion

The research results are as follows

Age	< 30 years	31 to 40 years	41 to 50 years	> 51 years
Physicians	3	9	27	11
Administrators	1	2	7	5
Assistant Administrators	4	8	2	1

Table 1: The age of the respondents

Gender	Male	Female
Physicians	39	11
Administrators	14	1
Assistant Administrators	6	9

Table 2: The Sex of the respondents

Experience	< 2 years	2 to 5 years	> 5 years
Physicians	3	9	38
Administrators	1	2	12
Assistant Administrators	4	8	3

Table 3: The Professional Experience of the respondents

When the administrators and physicians asked about use of computers in both professional work and personal life there was a mixed response which is sketched in

Figure 1 .Over all there is acceptance of computers applications and information technology tools in both professional and personal life. It was also found out that the administrators and physicians whose age was above 60 were less occupied with computers and IT tools.
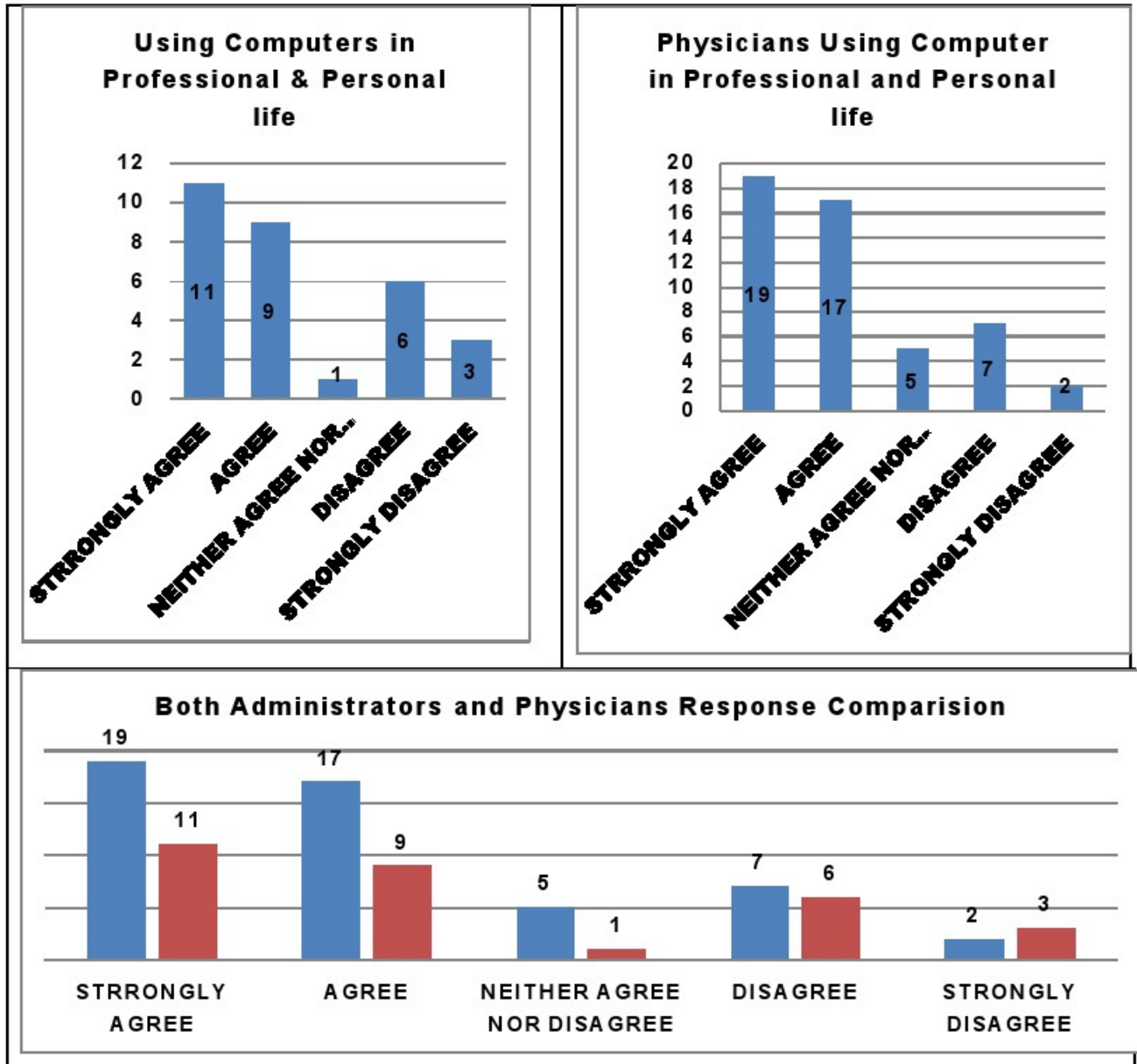

Figure 1: Use of Computers in Professional work and Personal Life

When the administrators and physicians were questioned about using any other application packages other than ERP the responses can be seen in Figure 2 .Over all

there is a extensive acceptance and use of other application packages such as word processing software, presentation software, spreadsheet software, email software, antivirus software, *statistical* packages, video and voice conferencing software . It was also found out that the responded were using this application service from their laptop and android phone.
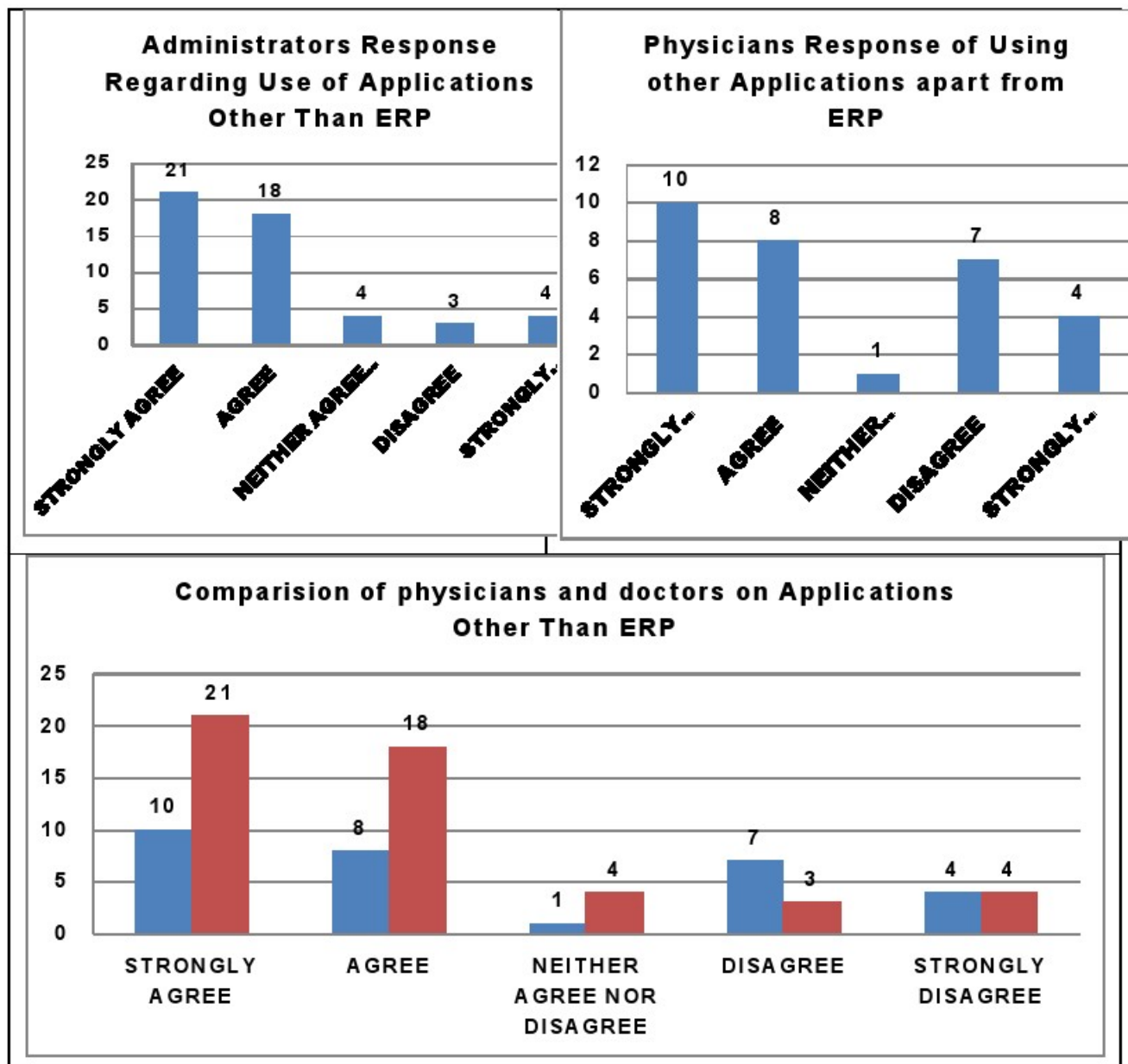
Administrators Response Regarding Use of Applications Other Than ERP

Physicians Response of Using other Applications apart from ERP

Comparision of physicians and doctors on Applications Other Than ERP

Figure 2: Using other computer applications packages apart from ERP

When the administrators and physicians were questioned regarding the benefits of HIS in the work operations the response was good both 41 physicians, 21 administrators

strongly agreed & agreed that can be seen in figure 3 .The respondents elaborated that ERP has benefits in terms of providing quick access to information and schedules, better record management, Faster information flow between various Departments, Availability of timely and accurate information, Improved quality of documentation, Enhanced ability to track patient's record, Provides accurate legible and timely orders and results, instant access to the patient chart, Decreases turnaround treatment times, Instantly retrieves information of previous visits or medical encounters, enhance information integrity, reduce transcription errors, reduce duplication of information, accuracy of records and administrative information, able to provide up to date financial details, admission, discharge and transfer data with simplified access. The administrators liked the feature of HIS which provides accurate happenings at all the levels and listing the details in depth.
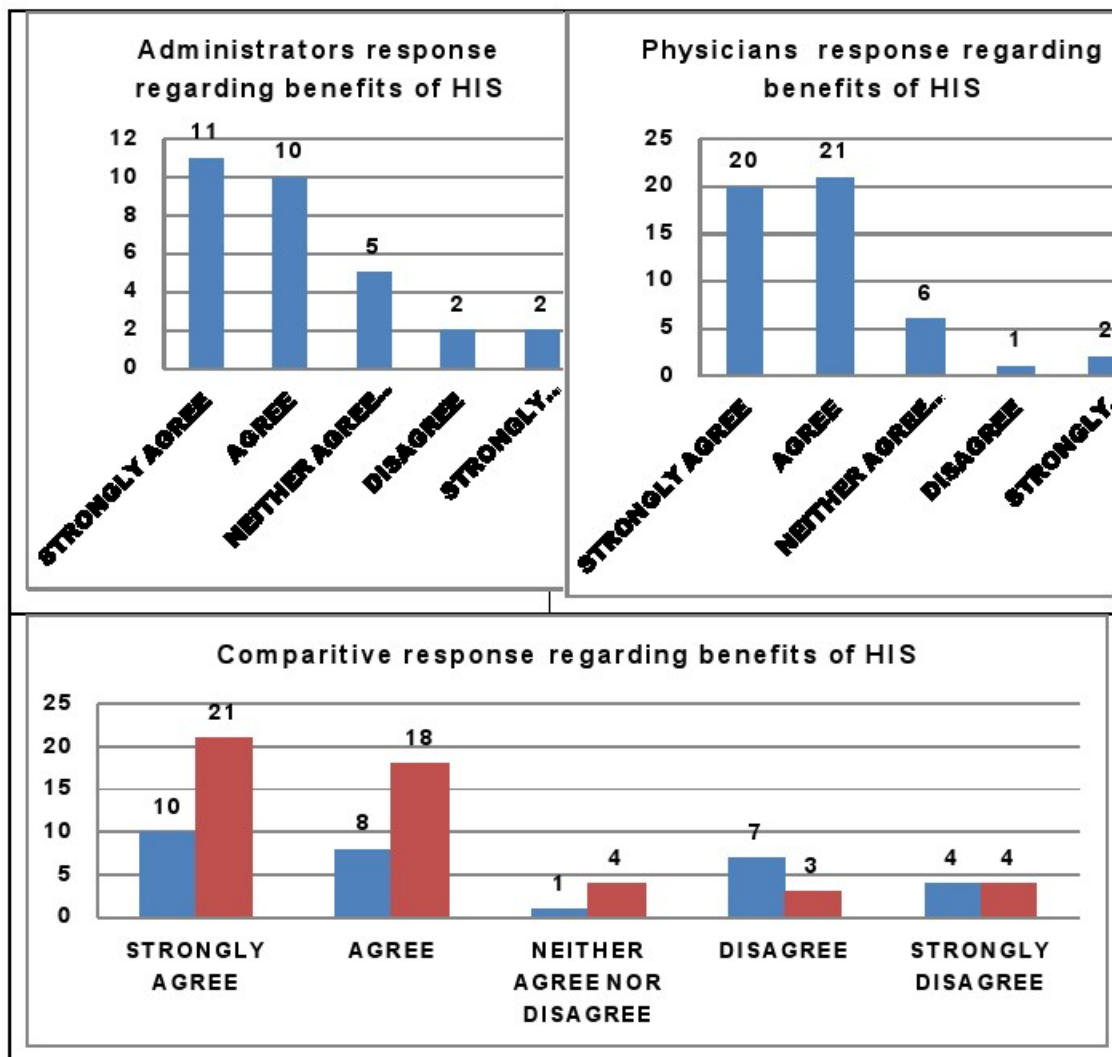

Figure 3: Administrators and physicians response regarding benefits of using HIS

When the administrators and physicians were questioned regarding the access to important information the responses can be seen in figure 4. The respondents elaborated that ERP has benefits in terms of providing report (daily, weekly, monthly, quarterly, half yearly and annually) on outpatient appointment, financial status, accounts payable, inventory, human resources and operation of various department with status , the physicians said electronic reporting system speeds up access to information they akin to the features of HIS such as Medical reports (including discharge, consult, oncology, surgery) , Diagnostic imaging reports (including mammogram, X-ray, CT, ultrasound) and said it makes the treatment process more speedy without delays.
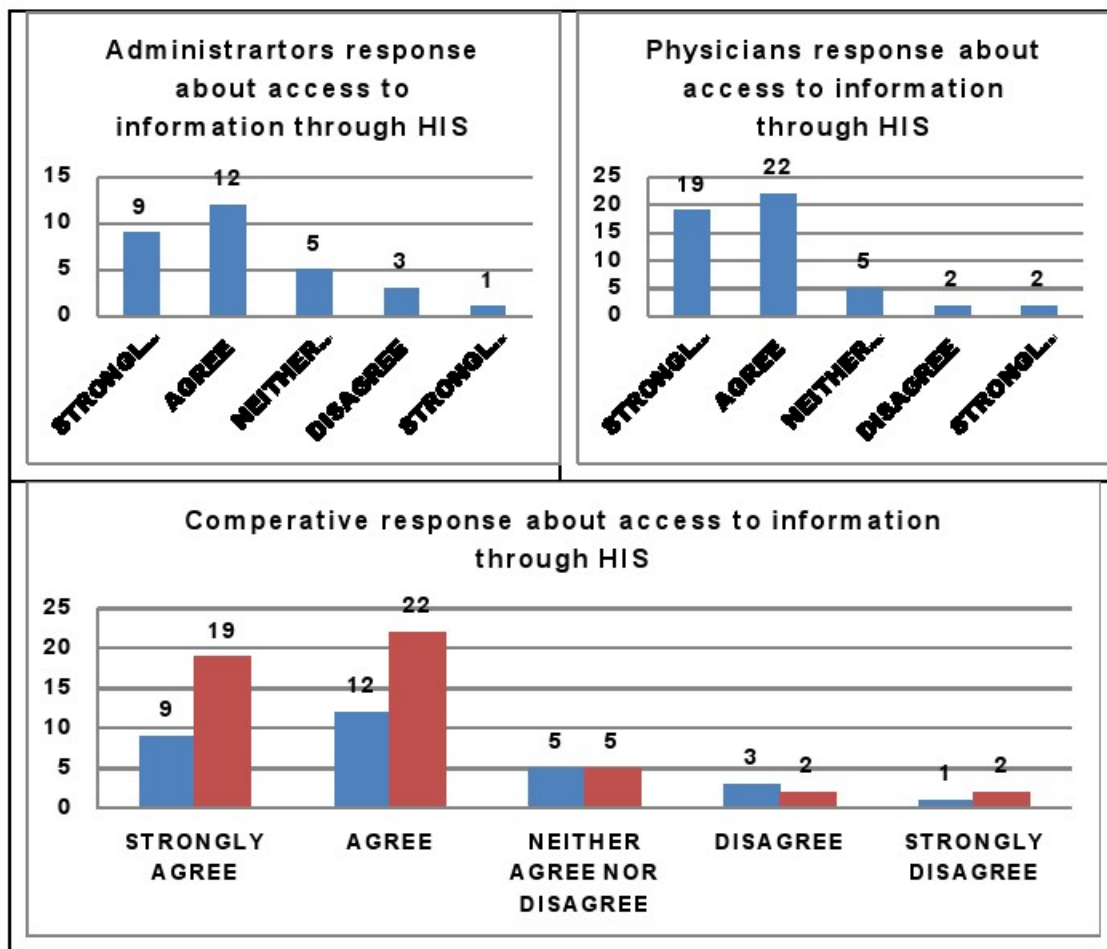

Figure 4: Administrators and Physicians Response Regarding Access to Information by Using HIS

- When the respondents were questioned regarding the effectiveness of hospital information system for individual tasks as well as group task they responded by telling the present HIS is working well when it came to individual tasks like (Availability of timely and accurate information, quick response. instant access to the patient chart etc.) but when it came to group task the respondents were not happy. On further investigation it was found that the group tasks were less chosen because of poor integration with other departments .It was also found out that about 5 hospitals in the sample were planning for fully integrated system with online access of information.

- When the respondents were questioned regarding can HIS applications save time and improves work productivity large majority the respondents believed that HIS application can save time, improve productivity of various operation, department and result in quality output. On further investigation it was found that the physicians were saving lot of time by having access to electronic reporting system.

- When the respondents were questioned regarding the user friendliness, intelligent decision making feature of HIS. Majority of the respondents believed that HIS application were user-friendly and further concluded that when HIS modules if used in appropriate manner it resulted in improved and intelligent decision making.

- When asked about the barriers or *obstacles or areas of concern* that they face while using HIS the respondents were not happy with events like

  o The delays happen because the system is working too slowly

  o Often patient-related work gets delayed because you don't find appropriate information\

  o Security issues even delay the work

  o Threats of virus from internet

  o New technology adaptation

When the respondents were questioned regarding the overall satisfaction of hospital information system large majority of respondents were happy about the applications that they were using and were satisfied.
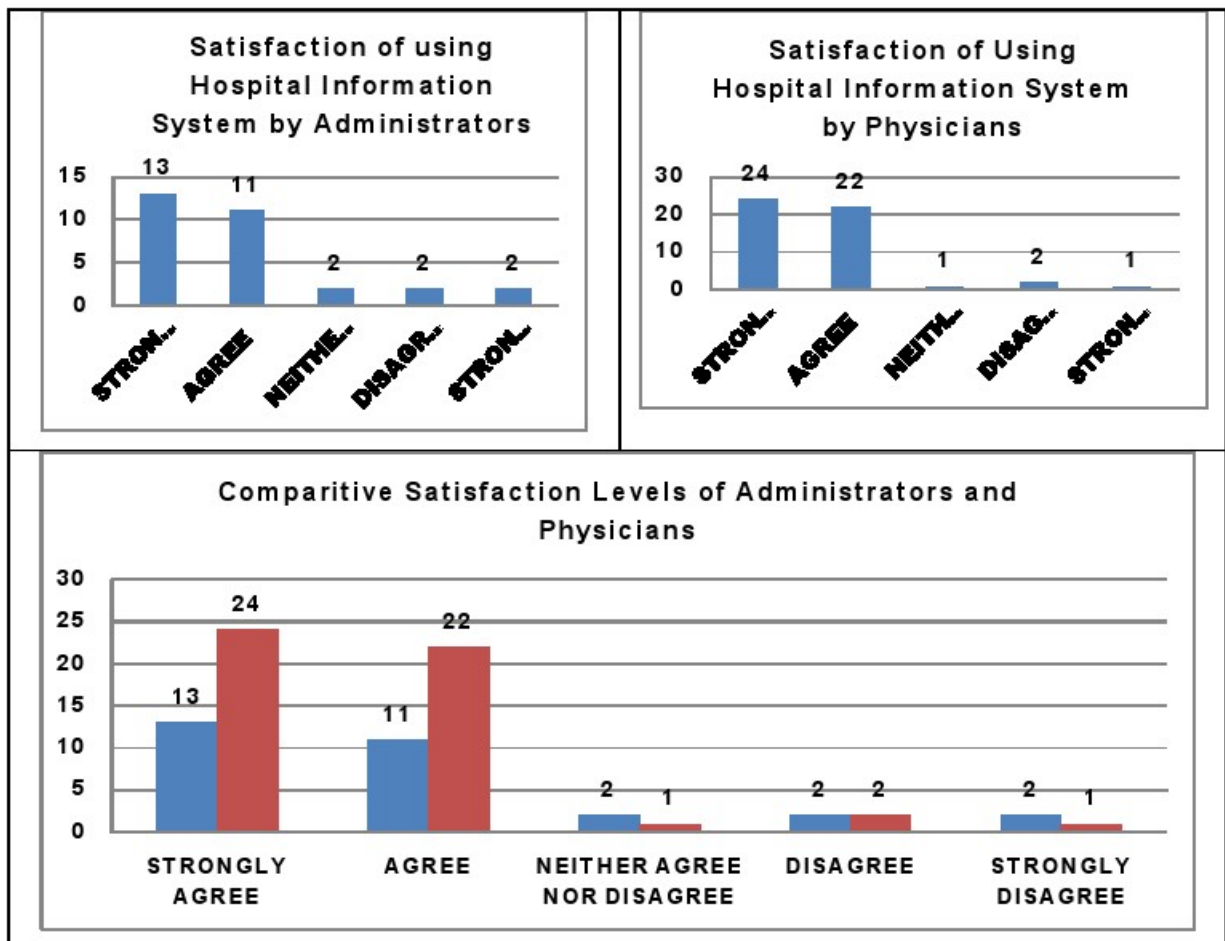
Figure 5: Administrators and Physicians overall satisfaction towards HIS

Conclusion

Information and communication technology tools are rapidly growing segments of the world ecosystem developing countries such as India has kept pace with the world in modern technology. Healthcare professionals can no longer ignore the application of information technology in their professional and personal life. Many healthcare professionals do not realize how Information and Communication technology has revolutionized the way medicine is practiced and how healthcare information is documented, archived and retrieved at the point of care .It is evident from various studies that the use of HIS offers tremendous opportunities to reduce clinical errors, support health care professionals, increase the efficiency of care, even to improve the quality of patient care. Thus healthcare professional have to adopt themselves to changing work culture .it was found out that the respondents were using computers in both professional,

personal life with extensive acceptance and use of other application packages apart from HIS. When they were questioned regarding the benefits of HIS they listed out core benefits, liked the features such as electronic reporting system, HIS role in group and individual tasks maximization, user friendly character and decision making support.

List of Abbreviations

ERP -	Enterprise Resource Planning
HIS -	Hospital Information System
IT -	Information Technology
IS -	Information Systems

Reference

1. Idowu P, Cornford D, Bastin L (2008).   Health informatics deployment in Nigeria. Journal of Health Informatics in Developing Countries, 2(1), 15-23

2. Neeraj Gour, Dhiraj Srivastava (2010). Knowledge of Computer among Healthcare Professionals of India: A Key toward e-Health. Telemedicine and e-Health, 16(9): 957-962

3. James L. Rogers and Olga M.Haring (1979), The Impact of a Computerized Medical Record Summary System on Incidence and Length of Hospitalization, Medical Care, vol.17. No.6, pp. 618-625

4. Richard S. Dick, Elaine B. Steen, and Don E. Detme (eds.) (1991). The Computer Based Patient Record, An Essential Technology For Patient Care, Washington, DC: National Academies Press

5. National IT Backbone for Healthcare by Dr. Ajit K. Nagpal Chairman Executive Council ,Batra Hospital & Medical Research Center, New Delhi http://www.ehealthonline.org/articles/article-details.asp? Title=National20IT20Backbone20for20Healthcare&ArticalID=2355&Type=COLU MNS (accessed on 11th January 2011)

6. Fierce healthcare (2011) Research and Markets: Hospital Information Systems (HIS) - Global Opportunity Assessment, Competitive Landscape and Market, Available from http://www.fiercehealthcare.com/press-releases/research-and-markets-hospital-information-systems-his-global-opportunity-as-0 , [Accessed 24/01/12]

7. Al-Nashmi & Maha Eissa (2003). The role of vendors in health information systems implementation: Assessing the perception of healthcare executives and vendors University of Pittsburgh; Available at: http://proquest.umi.com

8. David W. Bates, Atul A. Gawande (2003) Improving Safety with Information Technology, New England Journal of Medicine,348:2526-2534

9. Susan Athey and Scott Stern (2002), "The Impact Of Information Technology On Emergency Health Care Outcomes," Rand Journal of Economics, v33(3,Autumn), 399-432