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ASSESSMENT OF AWARENESS AND USE OF INFORMATION TECHNOLOGY BY HEALTHCARE PRACTITIONERS FOR PROVIDING BETTER HEALTHCARE IN MUMBAI CITY

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ABSTRACT

Nowadays, Information Technology is being used by most of the persons in their day-to-day life. This paper is focused on study of awareness and use of Information Technology by Healthcare practitioners for providing better healthcare in Mumbai city. The research aims to find the extent of use of Information Technology (IT) amongst Healthcare Practitioners in Medical colleges and hospitals. Information Technology is used in every sector, e.g. in healthcare sector, the IT may be used in communication with the patients, clinicians, performing analysis, research, improving services by using healthcare applications, healthcare apps etc. The study is based on the responses given by the healthcare practitioners in using IT in their profession.

Keywords - Healthcare, Information Technology (IT).

I. INTRODUCTION

Information Technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. IT is used in every sector namely, healthcare, insurance automobile, construction, e-commerce etc.

Healthcare practitioners are highly skilled workers, in professions that usually require extensive knowledge for providing healthcare services. This category includes physicians, physician assistants, dentists, midwives, radiographers, registered nurses, pharmacists, physiotherapists, optometrists, operating department practitioners and others.

Healthcare plays a crucial role in society. Everyone depends on Healthcare services at various levels and to varied extent. With an ever growing population in an economically advancing country like India, it is but difficult to meet the Healthcare needs of every individual satisfactorily. Also, not every individual will be able to obtained the required Healthcare services at the right time and an economic cost.

IT plays a substantial role in providing better healthcare services to the society from all walks of life.

Use of Information Technology in Healthcare will improve services, the quality, efficiency and effectiveness of the whole system to provide healthcare serfvices to the society.

Use of Information Technology in healthcare profession will help in-

- Preventing medical errors;
- Increasing healthcare accuracy;
- Increasing healthcare work process like communicating; with clinician or patients etc.;
- Decrease papere work;
- Expand access to affordable care.

In keeping in view of the advantages of using Information Technology in the healthcare domain, the study was conducted regarding the level of awareness and use of Information Technology by healthcare practitioners for providing better healthcare in Mumbai Cilty.

II. AIMS AND OBJETCIVES

Information Technology plays an important role in providing better services at a minimal cost in every domain. The study is based on finding the level of awareness of IT amongst healthcare practitioners and also the use of Information Technology by them in providing substantial Healthcare services. The aims and objectives of the study are:

1. To study the level of awareness about IT amongst Healthcare practitioners.
2. To assess the use of IT in Healthcare services by Healthcare practitioners.

III. REVIEW OF LITERATURE

Study conducted by Nurjahan M.I., T.A. Lim, S.W. Yeong, on Utilization Of Information Technology In Medical Education, concludes that a majority of their students surveyed (75.4%) had never used any electronic literature (e.g. MEDLINE) search. [2]. Ibrahim S Bello, Fatiu A Arogundade, Abubakr A Sanusi, conducted a study on Knowledge and Utilization of Information Technology Among Health Care Practitioners and Students in IleIfe, Nigeria: A Case Study of a University Teaching Hospital and found that only 18.9% health practitioners had good knowledge and utilization habits [4]. Study conducted by Bulu Maharana, Swarupanjali Biswal, N. K. Sahu on Use of Information and Communication Technology by Medical Students: A Survey of VSS Medical College, Burla, India states that the medical practitioners in most of the cases use computers once in a month and only 20% use computers daily. Nearly 10% never use a computer which is quite discouraging. Although the students consider computers as an integral part of Medical education, their overall use is infrequent [6]. It has found by Praveen Kumar in the study of Application of information and communication technology (ICT) by medical students: A study of Government Medical College, Chandigarh, India, that only 12.76% of the medical students use the Internet to get information for patients [11]. Also, Canna J. Ghia, Abhishek S. Patil, Jignesh K. Ved, in their research work titled Benefits of Telemedicine and Barriers to its Effective Implementation in Rural India: A Multicentric E- Survey have found that 48% doctors strongly agreed that telemedicine should be implemented in all hospitals with Internet facility. Also, 42% doctors agreed that Telemedicine will help to save the time and money of the patients [13].

Since the development of the computer and the evolution of the Internet, Information Technology (IT) has had a positive impact on health care delivery systems worldwide, particularly in the areas of disease control, diagnosis, patient management and teaching [20-22].

While the use of CD-ROM and interactive software packages have greatly contributed to dissemination of information among health care practitioners, its use is still very limited in developing countries in Africa [23, 24]. The computer and IT offer the physician the ability to store and retrieve patient clinical and sociodemographic information, laboratory results and preparation of referral notes. It also aids the preparation of discharge summaries, clinic letters and financial statements of the hospital, as well as delivery of laboratory results [25].

The Internet provides opportunities to retrieve up-to-date information on different aspects of diseases, interact with colleagues via videoconferencing, and enhance communication amongst colleagues in different continents. Free access to Medline, medical journals, textbooks and the latest information on breakthroughs in medicine also encourages learning and research [26].

Clinical informatics aims to improve patient care by the intelligent application of technology and hopes to increase the effectiveness and efficiency of care, as well as patient safety [27,28]. Informatics can fulfil its promises in developing countries only if health care practitioners are trained in basic computing skills and IT. Designing such training will necessitate an assessment of baseline knowledge and the utilization patterns of all personnel involved in health care delivery which is the major thrust of this survey.

IV. METHODOLOGY

The research survey was conducted at the Seth GS Medical College and KEM Hospital, Parel, Mumbai, India. Seth GS Medical College and KEM Hospital represents one of the largest Municipal Hospital in Mumbai to deliver quality health care to people from all walks of life.

The literatre review does not support sufficient data to understand the use of Informationa Technology by Healthcare Practitioners in the Indian scenario. Hence, Quantitative approach was implemented to understand the same. Survey method was used to get data. Questionnaire and Face-to-face Interviews were conducted to get appropriate information from the respondents.

The target population was the respondents from various departments of Seth GS Medical College and KEM Hospital namely, Community Medicine, Medicine, Physiotherapy, Pediatric, Gynacology, Forensic department and MBBS students etc.

An initial consent was acquired from the dean to carry out the well designed survey. A written communication was sent across to various departments, so as to carry out the survey departmentwise. Before the start of the survey the respondents were made aware about the study and its relevance to them in their respectuive domains. A proper date and time was decided to conduct the survey so as to get the desired and relevant responses.

A well designed pretested questionnaire was administered amongst the respondents so as to gather knowledge about the use of IT by Healthcare Practitioners. The Questionnaire had majorly objective responses. Only 243 respondents were able to submit information by answering the questionnaire and some of the respondents were unable to submit their responses due to various job responsibilities.

4.1 Limitations of the Study

It was very difficulty to get the answers from the healthcare practitioners because of their various job responsibilities. Only 243 respondents were able to anser the questionnaire. The study was only focused to various departments of Seth GS Medical College and KEM Hospital, Parel, Mumbai, India.

V. RESULT AND DISCUSSION

A study was conducted at Seth G. S. Medical College and K.E.M. Hospital. A view of 243 doctors including students from different speciality was taken, to conduct this study of "Assessment and Awareness of IT amongst Healthcare Practitioners in Mumbai City" through questionnaire. A total of 42 doctors from Community Medicine department (93%) demonstrated that they are using IT for searching information, email surfing etc. while only 22 doctors (49%) using IT for maintaining patient records electronically. It was also found that most of the doctors using IT for research work (73%) and data analysis (60%).

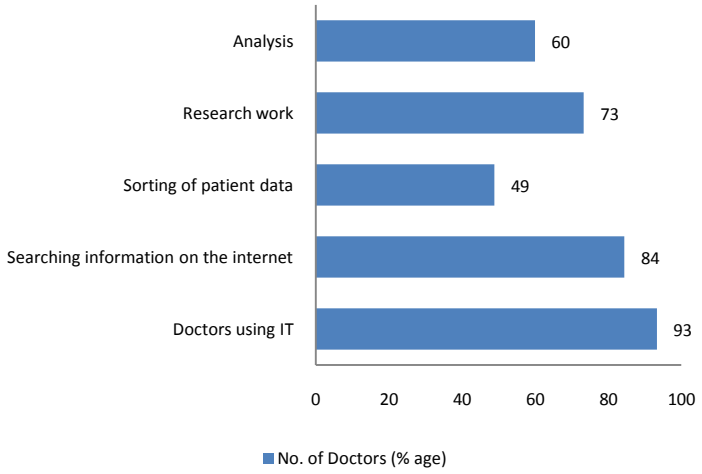

Fig. 1. Use of IT by Doctors in various work areas

It has been observed from the study that very few doctors are using IT for electronic communication within and outside the hospital. The below graph shows the % wise use of IT for various electronic communication by Healthcare Practioners.

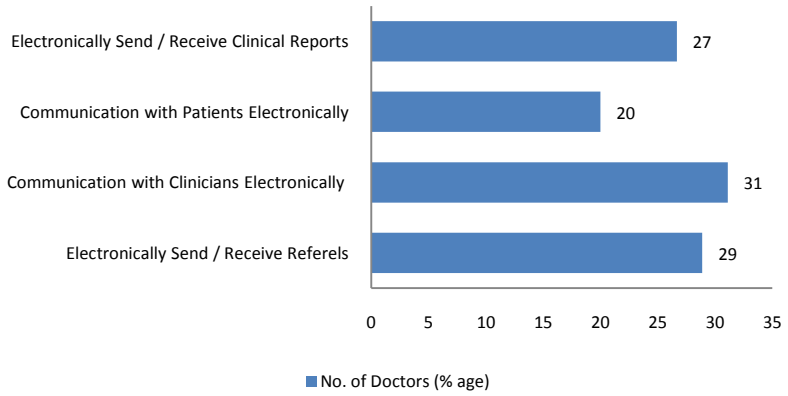

Fig. 2. Use of IT by Doctors in Healthcare Communications

The study also states lesser use of healthcare applications in providing e-prescriptions and other generic healthcare services. The graph depicts that 11% of the doctors are using Healthcare applications amongst which only 16% doctors from this department facilitate their patients with e-prescription facility.

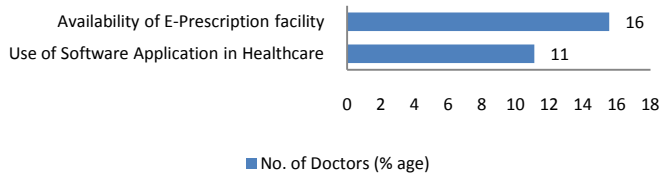

Fig. 3. Use of IT Applications in Healthcare

The use of IT amongst the doctors from the speciality in Medicine was also found low (22%) for maintaining patient records electronically. The doctors are mostly using IT for searching information on the Internet (91%). 70% of the doctors using IT for research works amongst which only 30% of them using IT for analysis. The study found that the less usage of IT amongst the speciliaty of Medicine in maintaining patient records.

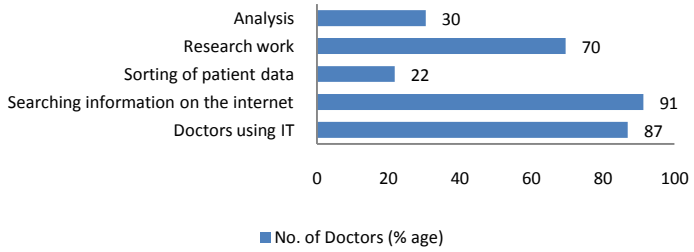

Fig. 4. Use of IT by doctors from the speciality in Medicine in various work areas

As shown in the Fig. 5, it has been observed that none of the doctors are communicating with the patients electronically whereas only a few of them (i.e. 26%) are using IT for communication with clinicians. Only 13% of them are using IT for sending and receiving clinical reports. The study found that Information Technology utilization amongst the doctors with Speciaity in Medicine was found low.

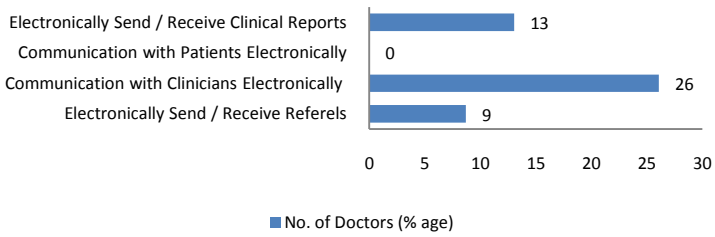

Fig. 5. Use of IT by the doctors from the speciality in Medicine

Also the view of physiotherapist was taken for their usage of IT in their profession. A view of 20 physiotherapists from the K.E.M. hospital nurses was taken in order to see IT awareness amongst them through questionnaire and it was found that most of the physiotherapists are using IT for searching information on the Internet. Fig. 6 depicts that 90% of the physiotherapists are using IT searching infromation on the internet of which 60% of the physiotherapist are using IT for their research work.

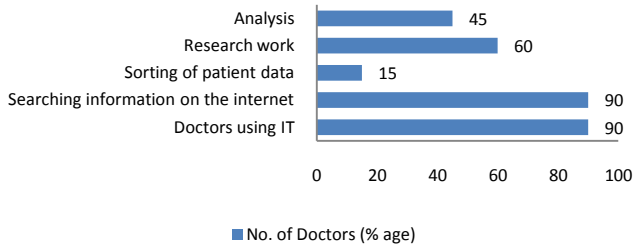

Fig. 6. Use of IT by Physiotherapists in various work areas

As shown in Fig. 7, it was found that the electronic communication of the physiotherapists in communicating with clinicians was 25% and with the patients was found very low (Approx. 10%). Only 5% of physiotherapists are using electronic communication for sending and receiving reports.

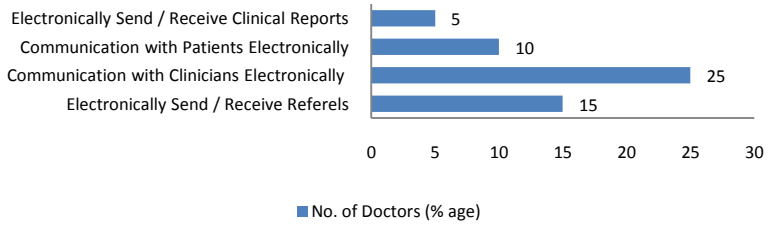

Fig. 7. Use of IT by Physiotherapists in Healthcare Communications

In the study it was also found that none of the physiotherapists are using software application in Healthcare (Fig. 8).

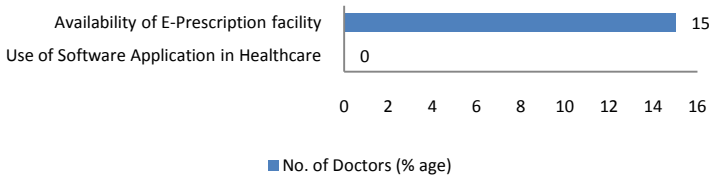

Fig. 8. Use of IT Applications in Healthcare by Physiotherapists

The doctors with speciality in pediatric, it was found that only more than 80% doctors are using IT for information search and approximately, 60% pediatricians are using IT for research work (Fig. 9).

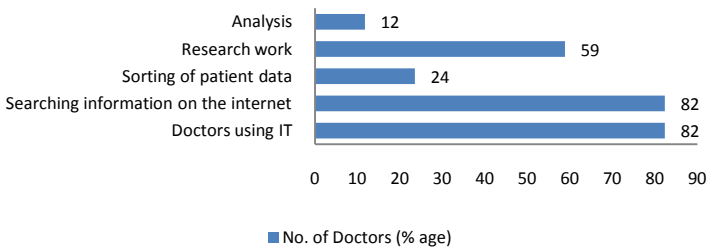

Fig. 9. Use of IT by Doctors in various work areas

As shown in Fig. 10, it was found that none of the pediatricians are using IT for communication with patients and also for sharing clinical reports. The study also found that none of the pediatricians are using healthcare softwares or e-prescription facility.

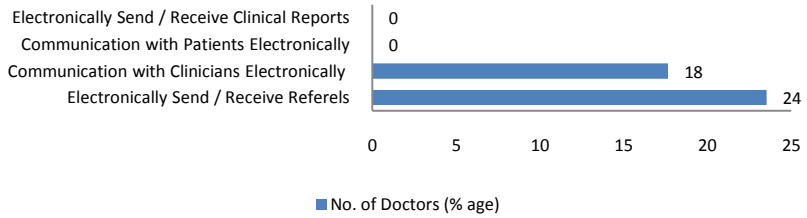

Fig. 10. Use of IT by Pediatricians in Healthcare Communications

A survey of anesthesiologist was also taken and found that most of the doctors are using IT for searching, sorting and surfing information on Internet. (Fig. 11).

It was also found that none of the anesthesiologist are using IT for electronic communication with patients or sharing information with the clinicians or use of healthacare application and e-prescription facility.

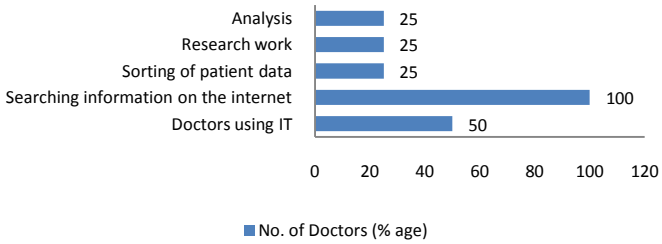

Fig. 11. Use of IT by anesthesiologist in various work areas

A total of 32 Gynecologist were surveyed, out of which 97% demonstrated that they are using IT for searching information, email surfing etc. while only 16% of gynecologist are using IT for maintaining patient records electronically. It was also found that most of the gynecologist are using IT for research work (Fig. 12).

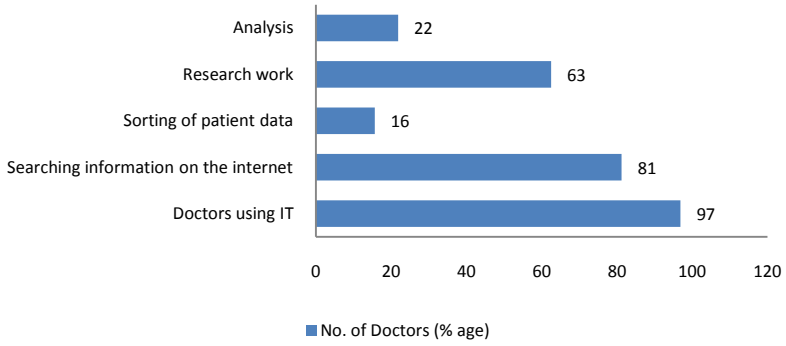

Fig. 12. Use of IT by gynecologist in various work areas

It was also found that none of the gynecologist are using IT for patient communication, e-prescription facility etc.

The use of Information Technology amongst the forensic department was also analyzed and found that very few doctors are using IT for research work. (Fig. 13).

Study also reveals that none of the doctors from this department are using IT patient communication, e-prescription etc.

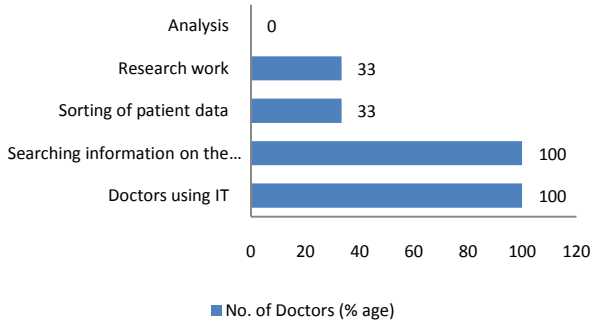

Fig. 13. Use of IT by doctors from forensic department in various work areas

The use of IT amongst MBBS Students was also found low. The students are mostly using IT for searching information on the Internet (89%). 53% of the MBBS Students using IT for research works amongst which 36% of the MBBS Students using IT for analysis. (Fig. 14) The study found that the less usage of IT amongst the Students in maintaining patient records.

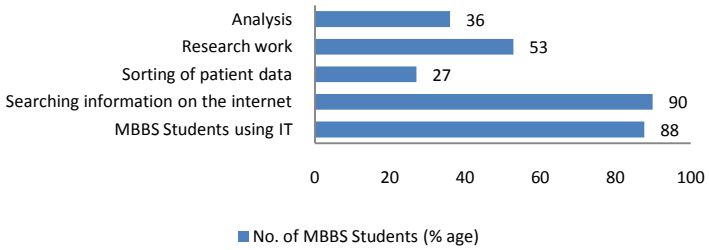

Fig. 14. Use of IT by MBBS Students in various work areas

As shown in the Fig. 15, it has been obsderved that 38% students are engaged in communicating with the clinicians electronically whereas only a few of them (16%) are using IT for communication with patients. Only 20% of the MBBS Students using IT for sending and receiving clinical reports. The study found that Information Technology utilization among MBBS Students was low.

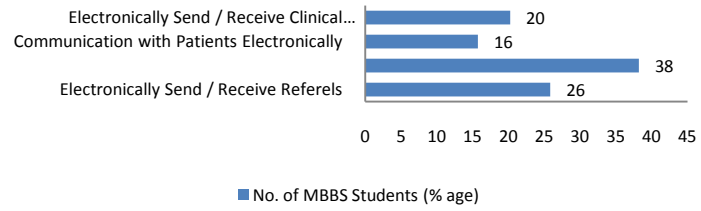

Fig. 15. Use of IT by MBBS Students in Healthcare Communications

The study also states lesser use of healthcare applications in providing e-prescriptions and other generic healthcare services.

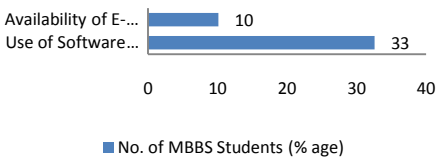

Fig. 16. Use of IT Applications in Healthcare by MBBS Students

Fig. 16 depicts that 33% of the doctors are using Healthcare applications amongst which only 10% doctors from this department facilitate their patients with e-prescription facility.

The overall usage of IT by all the department is found satisfactory only in the area of surfing and searching the information. In most of the cases it was foud that 88% of the doctors are using IT for searching information on the Internet. Study also reveals that 61% of the doctors are using IT fro research work amongst them only 38% of the doctors are using IT for analysis purpose. (Fig. 17)

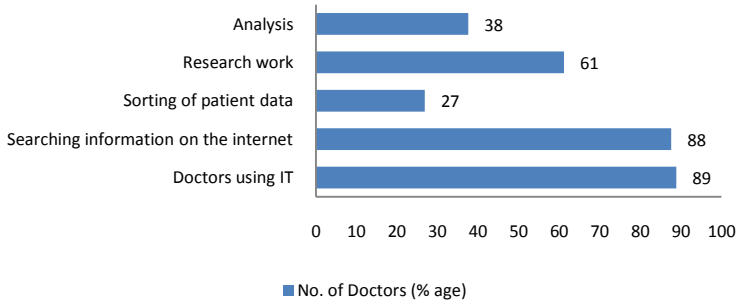

Fig. 17. Use of IT by all healthcare practitioners in various work areas

The overall usage of IT by health practitioners and practitioners in communication with the patients, sending or receiving clinical reports and communicating with the clinicians found to be low. (Fig. 18)

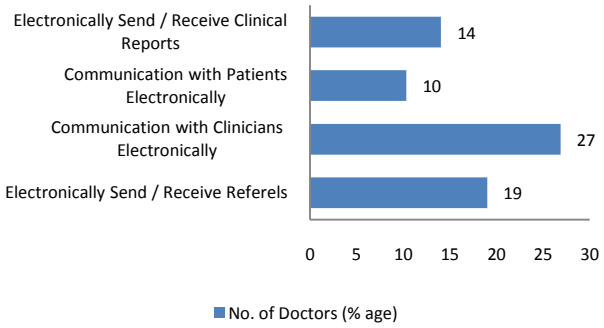

Fig. 18. Use of IT by Healthcare Professional and Practitioners in Healthcare Communications

The study also depicts that only few healthcare practitioners and practitioners are using healthcare softwares and e-prescription facility. (Fig. 19)

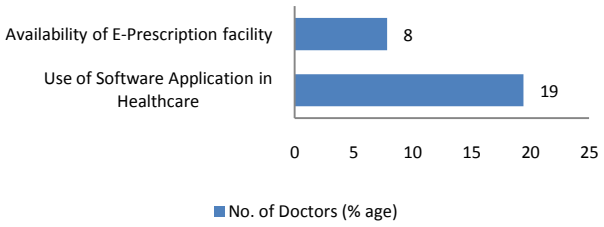

Fig. 19. Use of IT Applications in Healthcare by healthcare practitioners and practitioners

Healthcare plays a crucial role in society. Everyone depends on Healthcare services at various levels and to varied extent. With an ever growing population in an economically advancing country like India, it is but difficult to meet the Healthcare needs of every individual satisfactorily. Also, not every individual will be able to obtained the required Healthcare services at the right time and an economic cost. Use of IT plays a substantial role in

providing better healthcare services to the client at the earliest. The hospitals like Seth G. S. Medical College and K.E.M. Hospital have to think on increasing usage of IT to speed up the process.

VI. CONCLUSION AND SUGGESTIONS

The research finding indicate the low level of use and awareness of Information Technology amongst Helath care practitioners in a Mumbai City. In order to increase the level of usage of IT amongst Health care practitioners it is suggested that positive steps need to be taken to make healthcare practitioners aware about the the advantages of using IT in communication with the patients, clinicians, performing analysis, research, improving services by using healthcare applications, healthcare apps etc.

The hospitals such as, Seth GS Medical College and KEM Hospital and other municipal hospitals have to take initiative of using Information Technology for daily work including administrative and healthcare services to deliver quality health care to people from all walks of life.

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