THIS STUDY CONDUCTS AN INQUIRY TO EVALUATE THE UTILIZATION OF COMPUTERS IN ASSESSING ENHANCEMENTS IN PATIENT CARE INSIDE HOSPITAL ENVIRONMENTS

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ABSTRACT

This article presents the results of an investigation on the use of computers to track the progress hospitals have made in improving patient care. Finding out how computers may help hospitals deliver better care to their patients is the driving force behind this study. A literature study on computer applications in healthcare is included at the outset of the research. Electronic health records, telemedicine, and clinical decision support technologies all fall under this category. Every aspect of these technologies, from their potential advantages and disadvantages to their effects on healthcare spending and patient outcomes, is up for discussion. The next section uses the study's conclusions to give a case study of a healthcare facility that has implemented an electronic system for patient care. The capabilities of the system include telemedicine, electronic health records, and clinical decision assistance. This study aims to assess the system's effect on patient care by looking at factors including diagnostic efficiency and accuracy, patient satisfaction, and healthcare provider collaboration. Conclusions from the study indicate that hospitals may greatly benefit from using computer technology to enhance patient healthcare. Computerized patient care systems provide several advantages, such as more accurate and efficient diagnoses, improved treatment coordination amongst healthcare providers, and happier patients. But, the study also shows that there are obstacles to deploying these systems, such as resistance to change, high costs, and the need of training. When all factors are considered, this investigation gives healthcare practitioners serious information on the possibilities of electronic devices to enhance patient care in institutions, which is useful for those who are thinking about implementing such systems.

Keywords: *Electronic health records, computerized patient care systems, clinical decision support systems, care for patients.*

1. INTRODUCTION

The objective of this research project was to examine how computers may be used to help with the advancement of hospital care for patients. This thesis is an attempt to document the findings from the investigation. The student want to learn more about the many ways that institutions might improve the quality of medical care they provide by using computer technology in this investigation. As a first

step, the study will conduct a literature search on various computer-related topics related to healthcare, including electronic medical records, systems that facilitate clinical decision-making, and telemedicine. This search is a part of this section of the inquiry. In order to learn more about the pros and cons of these technologies, how they affect patient outcomes and healthcare costs, and so on, the researcher dissect them. The report then go on to provide a case study of a healthcare institution that has finished implementing an electronic health record system. Electronic health records, clinical decision support tools, and telemedicine capabilities are all part of the system. Results from the study, which looks at how a system affects patient outcomes, include better treatment coordination across various healthcare providers, faster and more accurate diagnoses, and higher levels of patient satisfaction overall. Study findings suggest that healthcare facilities, including hospitals, might greatly benefit from using computer technology to improve patient care. Some potential advantages of a computerized patient healthcare system include increased efficiency and accuracy in diagnosis and treatment, better communication between healthcare providers, and happier patients. In addition, studies have shown that medical errors are less likely to occur when using computerized patient care systems. The use of a computer the report does, however, highlight some of the challenges associated with putting these methods into action (Raghunath et al., 2021). Some of these challenges include people's reluctance to change, the costs of implementing these changes, and the need of training. Taken together, the results provide light on how healthcare institutions might use computer technology to improve the quality of care they offer their patients. Furthermore, medical professionals thinking about using these systems may benefit from the research. The use of computers has become more commonplace in the healthcare business due to the extensive installation of electronic health records, clinical decision support systems, and telemedicine capabilities by several hospitals and healthcare providers in the last few years. These innovations may increase the precision and efficacy

of decisions, facilitate better coordination of care among medical specialists, and enhance patients' overall sense of well-being. Despite the fact that new technology may provide a lot of advantages, healthcare practitioners still worry about whether or not they are practical and useful (Burtch & Chan, 2019).

2. BACKGROUND OF THE STUDY

The use of computers in healthcare has increased dramatically in recent years. One explanation for this is because healthcare practitioners are always striving to improve diagnostic accuracy and efficiency, patient safety, and cost-effectiveness. Some computerized patient care technologies, such as EHRs, telemedicine, and clinical decision support systems, might radically alter the current state of healthcare delivery. To achieve this goal, they facilitate more frequent communication between medical professionals, ensure that patients have quick access to their records, and allow for patient-specific, tailored care. Computer patient care systems have the potential to improve healthcare, but there are several obstacles to its broad implementation. Obstacles that must be overcome include the high costs associated with establishing these systems, the requirement that healthcare practitioners undergo specialized training, concerns regarding the security and confidentiality of patient data, and the reluctance of both patients and healthcare providers to embrace change. The hope is that at the end of this research, the researcher will have a better understanding of how hospitals are using computers to track and analyze patient care improvements and how other healthcare facilities may do the same (Becker et al., 2022). The primary goal of this research is to identify the pros and cons of using electronic patient care systems in hospitals and other medical centers. Analyze how these systems affect patient care, taking into

account patient outcomes, patient happiness, and healthcare providers' efficiency. Find out what works best for hospitals when it comes to introducing electronic patient care systems, including how to overcome current obstacles and boost acceptance (Undru et al., 2022). The researcher hope that the research will make a substantial addition to the rapidly expanding field of studies investigating the role of technology in healthcare. In addition, student want to educate healthcare professionals on how computers and other technological advancements might improve the standard of care for hospitalized patients. Helping healthcare providers make educated choices about implementing digital patient care solutions is the primary objective. The healthcare business has lately seen a huge spike in popularity, thus student would also want to facilitate the incorporation of new digital technologies into it. Medical practitioners have used a range of technology resources, such as telemedicine, electronic health records (EHRs), and clinical decision support systems (CDSSs), to enhance the standard of care they provide to patients. There is still skepticism among medical experts about the efficacy and practicality of these technologies, despite their promise of improvement. Several service providers have voiced their apprehension about the time and money needed for training and system maintenance, in addition to the expenses associated with installing these systems. Take medical care as an example; according to Kvedar J. C. (2018), some individuals are resistant to change and want to stick to old-fashioned paper-based methods. Digital health technology have become more important in the delivery of medical care because of the COVID-19 pandemic. Amidst the rise of social distancing tactics, telemedicine has become an important tool for delivering healthcare to patients via distant means. On top of that, EHRs (or electronic health records) have simplified the process by which doctors and other medical staff may remotely access patient records and information.

It is critical to assess the use of computers in patient care to understand the effects these tools have on healthcare delivery and patients' outcomes, especially in light of the fast development of medical technology. This study aims to analyze the adoption of automated patient care systems in healthcare institutions and contribute to the extension of the present body of research. Examining the pros and cons of these technologies is the primary goal, along with finding out how to make the most of their ability to enhance patient care (Suleimenov et al., 2020).

3. LITERATURE REVIEW

As the title of the article suggests, the literature study is supposed to touch on how hospitals are now taking care of patients and how computers may improve that. The literature review could cover the following ground: Hospitals now face the following obstacles while caring for patients: Possible topics covered in this literature review include medical mistakes, communication breakdowns, and limited hospital resources, all of which pose challenges to providing high-quality patient care. Problems with communication, lack of resources, and medical mistakes all contribute to hospitals' struggles to provide high-quality patient care. Mistakes in healthcare: Diagnosis, therapy, and follow-up are all potential points of entry for medical mistakes. Their emergence may be facilitated by factors including healthcare personnel' insufficient training, a lack of process uniformity, and misunderstandings (Mijwil & Aggarwal, 2022). Injury, incapacity, and death are among the serious consequences that patients might face as a result of medical mistakes.

Problems with communication: Good communication between doctors, patients, and their loved ones is essential for providing top-notch medical treatment. Disruptions in communication may arise when healthcare personnel face language hurdles, cultural differences, or lack basic communication skills. Controversies like this may lead to miscommunication, medical mistakes,

and bad patient outcomes. Limitations on available resources: Problems with resources, such as money, equipment, and staff, are common in hospitals. Reduced patient access, longer wait times, and delays in service are all possible outcomes of these constraints. Because healthcare practitioners may not have the means to provide the best possible treatment, resource limitations might also affect the quality of treatment. In order to provide high-quality, value-based, coordinated care, hospitals and health systems are progressively using electronic health records (EHRs) and other health information technology (IT) systems to collect, analyze, and track patient data. This trend was highlighted in a 2016 research by the American Hospital Association. Another research by the University of Michigan found that switching from paper to electronic health records lowered outpatient care costs by 3%. The need of developing and implementing effective solutions to improve institutional patient care is highlighted by these challenges. By improving communication, reducing medical mistakes, and making the most of limited resources, computers and other modern technology may help with some of these problems (Davenport & Kalakota, 2019).

4. RESEARCH QUESTION

- How does patient satisfaction improve with hospital care?

5. RESEARCH METHODOLOGY

Quantitative research refers to studies that examine numerical readings of variables using one or more statistical models. The social environment may be better understood via quantitative

research. Quantitative approaches are often used by academics to study problems that impact particular individuals. Objective data presented in a graphical format is a byproduct of quantitative research. Numbers are crucial to quantitative research and must be collected and analyzed in a systematic way. Averages, predictions, correlations, and extrapolating findings to larger groups are all possible with their help.

5.1 Research design: In order to analyse quantitative data, SPSS version 25 was used. The direction and severity of the statistical association were determined using the odds ratio and the 95% confidence interval. researchers reported a statistically significant level at $p < 0.05$. To identify the primary features of the data, a descriptive analysis was used. Data acquired by surveys, polls, and questionnaires, or by modifying existing statistical data using computing tools, is often assessed mathematically, numerically, or statistically using quantitative methods.

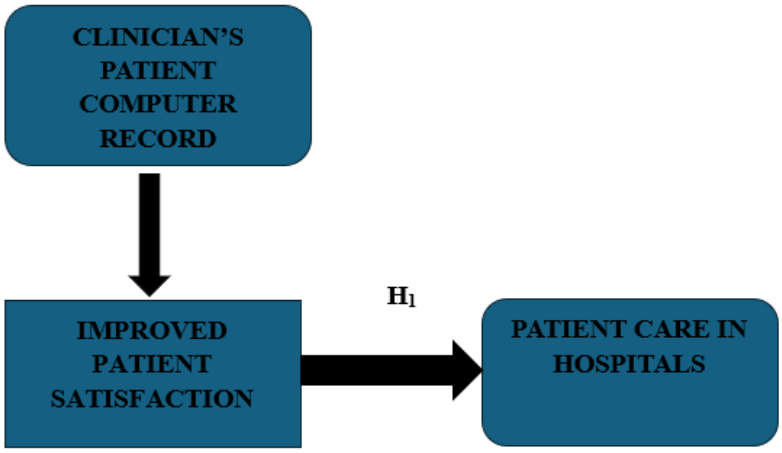
5.2 Sampling: After pilot research with 56 Chinese Researcher, 768 Rao-soft pupils were included in the final Investors. Male and female Researcher were picked at random and then given a total of 924 surveys to fill out. A total of 850 questionnaires were used for the calculation after 882 were received and 32 were rejected due to incompleteness.

5.3 Data and Measurement: A questionnaire survey functioned as the primary data collection instrument for the investigation. The survey had two sections: (A) General demographic information and (B) Responses on online and non-online channel factors on a 5-point Likert scale. Secondary data was collected from several sources, mostly focusing on internet databases.

5.4 Statistical Software: The statistical analysis was conducted using SPSS 25 and MS-Excel.

5.5 Statistical Tools: To grasp the fundamental character of the data, descriptive analysis was used. The researcher is required to analyse the data using ANOVA.

6. CONCEPTUAL FRAMEWORK



7. RESULT

❖ Factor Analysis

One typical use of Factor Analysis (FA) is to verify the existence of latent components in observable data. When there are no easily observable visual or diagnostic markers, it is common practice to utilise regression coefficients to produce ratings. In FA, models are essential for success. Finding mistakes, intrusions, and obvious connections are the aims of modelling. One way to assess datasets produced by multiple regression studies is with the use of the Kaiser-Meyer-Olkin (KMO) Test. They verify that the model and sample variables are representative. According

to the numbers, there is data duplication. When the proportions are less, the data is easier to understand. For KMO, the output is a number between zero and one. If the KMO value is between 0.8 and 1, then the sample size should be enough. These are the permissible boundaries, according to Kaiser: The following are the acceptance criteria set by Kaiser:

A pitiful 0.050 to 0.059, below average 0.60 to 0.69

Middle grades often fall within the range of 0.70-0.79.

With a quality point score ranging from 0.80 to 0.89.

They marvel at the range of 0.90 to 1.00.

Table1: KMO and Bartlett's Test

Testing for KMO and Bartlett's

Sampling Adequacy Measured by Kaiser-Meyer-Olkin .793

The results of Bartlett's test of sphericity are as follows: approx. chi-square

df=190

sig.=.000

This establishes the validity of assertions made only for the purpose of sampling. To ensure the relevance of the correlation matrices, researchers used Bartlett's Test of Sphericity. Kaiser-Meyer-Olkin states that a result of 0.793 indicates that the sample is adequate. The p-value is 0.00, as per Bartlett's sphericity test. A favorable result from Bartlett's sphericity test indicates that the correlation matrix is not an identity matrix.

Table: KMO and Bartlett's

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.793
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

The overall significance of the correlation matrices was further confirmed by using Bartlett's Test of Sphericity. A value of 0.793 is the Kaiser-Meyer-Olkin sampling adequacy. By using Bartlett's sphericity test, researchers found a p-value of 0.00. A significant test result from Bartlett's sphericity test demonstrated that the correlation matrix is not a correlation matrix.

- **Independent variable**

Clinician's Patient computer Record

A computer-based patient record, or CPR, is a database that stores information about patients. Along with a patient's medical history, it also includes personal details and financial information. Laboratory results and invoices provide the data. It connects various databases, electronic communication systems, and medical data input. The goals of CPR include implementing a data stream, improving care quality, and reducing organizational expenditure. Data mining and solid connection are two things a CPR system should provide. Clinical needs should be met by this electronic medical record system, which replaces paper charts. Administrative efficiency and

productivity are both boosted by a CPR, which in turn improves revenue management. In their 1991 paper Computer-based Patient Records: An Essential Technology for Health Care, the Institute of Medicine (IOM) coined the term computer-based patient record (Topol, 2019).

- **Factor**

Improved Patient Satisfaction

An individual's level of expertise is derived by their extensive exposure to many scenarios. Beginning with the many touchpoints—which may include browsing the website—the experience may continue with a physical visit to the institution, the admissions process, and meetings with the medical professionals, nurses, lab technicians, and support personnel. This may also include the actual space of the patient's room, the level of attention they get while there, and the steps they take to leave the facility. Perceptions of care during an inpatient stay are susceptible to a wide range of influences. It can also include the following: the facility's cleanliness, the way it looks, the accessibility of certain areas, the wait time, the doctors' ability to communicate clearly, the results of the treatment, the visit's cost, the food's quality, and so on. Meeting both the patient's general healthcare demands and their condition-specific needs is associated with higher levels of patient satisfaction. There are many factors that contribute to a patient's level of satisfaction with their health care experience. These include the following: the quality of service they received, the manner in which they were treated by staff members, the time they spent with doctors, nurses, and administrators, the ease with which they were able to access their medications, the location of their appointments, the accessibility of their care, the availability of their doctors, and the overall condition of the facilities (Myszczynska et al., 2020).

❖ Dependent Variable

Patient Care in Hospitals

A patient is among the most significant persons engaged in the medical industry. With the patient's comfort and well-being in mind, patient care guarantees that they are kept satisfied. The right to privacy and the right to be treated with respect are inherent rights. Comprehensive health services, such as primary care practices (such as appointment scheduling), short-term case management, and chronic disease care management are all part of the atient care management program, which aims to help patients take charge of their health. With the help of care management plans, patients are better able to take charge of their healthcare by following the straightforward instructions of their trusted doctors and other caregivers. Care models that put patients in charge of their own healthcare and use the most effective treatments are those that patient care management helps to create (Ahsan et al., 2022).

❖ Relationship between Patient Care in Hospitals and Improved Patient Satisfaction

Patient satisfaction is obviously one of the essential issues for health-care administrators to handle among the numerous components of the company. Numerous patient satisfaction surveys have been conducted in response to the demands of healthcare administrators. While these studies do highlight the relative importance of several features (such as medical and nursing care), they do not go into detail on any one of these characteristics. Additional precise study results are required to create an

intervention program that successfully enhances patient satisfaction. A big national private not-for-profit hospital system's 32 hospitals had their data gathered between 2007 and 2008 for this research. There are 31,471 instances that were surveyed to gauge patient satisfaction, and the study used the Consumer Assessment of Healthcare Providers and Systems in its hospital form. The following factors were included as control variables in two-stage multiple linear regression analyses: age, gender, perceived health, education, and race. The most important thing for patients is for nurses and doctors to treat them with kindness and respect. Educating healthcare professionals on the importance of treating patients with dignity and respect is an important component of any successful intervention program to boost patient satisfaction. Patients will feel more at ease and satisfied as a result of the care they get from compassionate and knowledgeable nurses and other staff members (McKinney et al., 2020).

- ***H_{01}: There is no significant relationship between Patient Care in Hospitals and Improved Patient Satisfaction***

- ***H_1: There is a significant relationship between Patient Care in Hospitals and Improved Patient Satisfaction***

Table 2: H_1 ANOVA Test

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39588.620	339	5655.517	611.212	.000
Within Groups	492.770	510	5.356		
Total	40081.390	849			

The results are significant in this study. The p-value of 0.000 (below the 0.05 alpha threshold) indicates that the F value of 611.212 is almost significant. Thus, it follows that "***H_1: There is a significant relationship between Patient Care in Hospitals and Improved Patient Satisfaction***" is accepted and the null hypothesis is rejected.

8. CONCLUSION

On the inside of here is the main argument "this study conducts an inquiry to evaluate the utilization of computers in assessing enhancements in patient care inside hospital environments" will draw its conclusion from the study's data and try to answer the research questions indicated in the introduction. A brief synopsis of the study's key findings will be provided in the end, along with thoughtful commentary on how hospitals have adapted to the rise of computer technology in patient care. Based on the results, the study's conclusion might include the following data: How changes in patient outcomes and experiences have been influenced by the usage of computer technology: It is possible that the study's results suggest that healthcare organizations that use computer technology see an uptick in patient satisfaction, an improvement in communication amongst staff members, and a decrease in medical errors. Taking a look at how doctors and nurses use technology: The findings suggest that healthcare professionals who utilize computers in their work are more inclined to look on the bright side when it comes to the effects of technology on patient care and to really put that optimism into action. The research may find that patients report higher levels of satisfaction with their treatment and better health outcomes when they utilize computer technology to actively participate in their healthcare. Finding problems associated with

healthcare IT adoption and use is the driving force behind this research. Inadequate resources, tense interpersonal relationships, and a lack of opportunities for professional growth are all potential issues. In the conclusion, the researcher will discover not only suggestions for future research and clinical practice, but also an examination of the study's implications for computer technology in medicine. In an attempt to provide a thorough review, the conclusion will discuss the study's findings and how they relate to hospital patient care (Kim et al., 2020).

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