

Impact of Artificial Intelligence on Patient Experience in Selected Hospitals of Vellore - Shaping the Future of Healthcare

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Introduction

It's remarkable to look back and see just how far our world has come technologically. A large number of us hear the term artificial intelligence (AI), we figure robots performing every one of our responsibilities, translate people outdated. Artificial intelligence Driven PCs are modified to settle on choices with slight human inclusion, some even think if machines will before long settle on the troublesome choices we presently endow to our primary care physicians. More than robotics, AI in health care mostly refers to doctors and hospitals access big number of data which save life. This incorporates the treatment strategies and results, endurance rates, and the improved consideration among a great many patients. The computing force can identify and investigate enormous and little developments from the information and even make predictions through machines. With the expanding number of patients and ensuing demands for quality and reasonably priced treatment, healthcare organisations are understanding the benefits of the technology adopted. The implementation of AI in healthcare is currently at a primary stage this is mostly due to partial digitization of patient records in emergencies. Isn't new, however there have been hasty advances in the field later? This has empowered by the developments in computing influence and massive capacities of digital data that are produced.

Applications of AI in Healthcare

Artificial intelligence can be utilized to investigate and distinguish designs in enormous and complex datasets quicker and more unequivocally than has recently been possible.

1. The availability of data and the best approach to store and process it is an indication of the imaginative phase. The Internet structures, check features and the limit with regards to healthcare professionals to rapidly share information have overhauled the examination of data. "Big Data" in hospitals allows the sector to profit by researchers. These activities can get to more prominent and extra contrasting people than some other time in ongoing memory. They can besides draw from existing assessments for complete meta-examinations. This development grants therapeutic specialists to stay over human services, frameworks and advancements. This could be utilized normally to

distinguish chance impacts and recommend the exact treatment by distinct patient information and data from countless various patients.

2. E-Medical records authorize every patient case history, diagnosis results and significant information to be stored in a centralised system. The collected information takes into account increasingly engaged and precise mind just as the ability to see wellbeing patterns for every patients. Medical billing systems allows emergency clinics, centres and therapeutic practices to function in an easy way.

3. Mobile software applications are critical in improving transparency for patients and healthcare professionals. Mobile apps permit individuals to smoothly deal with their wellbeing and health and the whole thing from inciting them to get check-up's, to determine general medicine data or receiving to their investigation outcomes safely on online without booking an appointment with their doctors and wait for results. Doctors then again, can quickly get to data identifying with diseases and medications, images for clinical matters and progressed with training exercises.

4. Tele-health services, it is especially useful to those living in rural, regional and remote networks and requiring customary access to medicinal practitioners who live a few kms away. Teleconsultation is likewise gainful to healthcare laborers on area, as practitioners can give instruction and train virtually. For instance, video-conferencing are turning out to be savvy approaches to supplement nearby health services.

5. Clinical Care Utilizing AI to analyse clinical information, examine publication, and proficient rules could likewise educate choices about treatment. Medical imaging – medicinal scans have been systematically gathered and stored which are promptly accessible to prepare artificial intelligence systems. AI could decrease the expense and time associated with examining scans, possibly enabling more to be taken for target treatment. AI has demonstrated promising outcomes in distinguishing conditions, for example, eye diseases, and pneumonia, breast and skin cancers. Robotic tools constrained by AI have been utilized in research to do keyhole medical procedure to binds and lose injuries.

Need of the study

This paper traces the impact of the artificial intelligence in the hospitals and the use of AI can be seen at various level across the healthcare. Further this study examines and establishes patient experience and perception towards it.

Objectives of the Study

The objectives of the study are:

1. To evaluate the impact of development in medical technology in hospitals.

2. To measure the patient satisfaction towards the advancement of technology.
3. To assess the perception level of the artificial intelligence among the respondents.

Review of literature

Nuffield Council on Bioethics 2018, the utilization of AI raises various moral and social issues, a considerable lot of which cover with issues raised by the utilization of information and healthcare services innovations all the more extensively. A key challenge for future administration of AI advancements will be guaranteeing that AI is created and utilized in a manner that is straightforward and perfect with people in general, while stimulating and driving development in the segment.

Fei Jiang, 1 Yong Jiang (2017) Artificial intelligence (AI) intends to impersonate human intellectual capacities. It is bringing a change in perspective to medicinal services, fuelled by expanding accessibility of healthcare services information and quick progress of investigation strategies. Significant sickness territories that utilize AI applications incorporate malignancy, nervous system science and cardiology. We at that point survey in more subtleties the AI applications in stroke, in the three significant regions of early detection and diagnosis, treatment, just as result prediction and prognosis assessment.

P. Ziuziański, M. Furmankiewicz, and A. Sołtysik-Piorunkiewicz (2014) there is assortment of artificial intelligent systems utilizing in e-health for information management. The data dashboard is an opportunity for medicinal services officials for decision making. Blend of referenced instruments could give remarkably impacts in execution, quality and benefit of healthcare. Incorporating this frameworks and innovation participation got one of the most significant issues these days. Execution dashboards envision information and incorporate information hotspots for settling on choice quicker and progressively exact. It is significant particularly in such a pundit region like observing epidemiological status of the society

Methodology

The study is descriptive in nature and is based on both primary data and secondary data. The sample respondents were selected from selected Vellore hospital. Structured questionnaire was collected from 110 respondents. The respondents were selected using convenient sampling technique, the research approach is survey method. The statistical tools in use are ANOVA single factor, Coefficient of Correlation and regression.

Hypothesis:

H1: There is a negative relationship between advanced diagnosis done and result accuracy through advanced technologies.

H2: There is a relationship between E-medical records and information safety in hospitals.

H3: There is negative relationship between online consultation, treatment and patient satisfaction.

Data Analysis and interpretation

1. Advanced diagnosis and result accuracy through advanced technologies

ANOVA Single Factor						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4326	4	1081.5	23.92699	0.001854	5.192168
Within Groups	226	5	45.2			
Total	4552	9				

Here, calculated value is F-value and the table value is F-Cri.

F = 23.92699 - calculated value is greater than the table values F Cri. = 5.192168. So we **accept H₁** and reject H₀, i.e., there is a relationship between advanced diagnosis done and result accuracy through advanced technologies.

2. E-medical records and information safety in hospitals

	Column 1	Column 2
Column 1	1	
Column 2	0.997962	1

Table Value @ 5% : 2.58

Calculated Value : 0.997962

The calculated value 0.997962 < table value @ 5% i.e., = 2.58

So, **H₀ is accepted** and H₁ is rejected.

There is a relationship between E-medical records and information safety in hospitals. This only indicates that the progress of the technology has not only brought in accuracy and speed but also data safety in the hospitals.

3. Relationship between online consultation, treatment and patient satisfaction

Regression Statistics					
Multiple R			0.378185375		
R Square			0.143024178		
Adjusted R Square			-0.106975822		
Standard Error			35.64961633		
Observations			5		
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	848.4194229	848.4194	0.667576	0.473747449
Residual	4	5083.580577	1270.895		
Total	5	5932			

$F = 0.667576$ —is the calculated value. The regression is positive and it closer to 1. Therefore it has been understood that there is a positive relationship existing between online consultation, treatment and patient satisfaction.

Conclusion

Healthcare delivery has over years have gone complex and challenging. An enormous piece of the difficulty in conveying healthcare services is a direct result of the voluminous information that is produced during the time spent healthcare services, which must be translated in an intelligent fashion. Artificial intelligence frameworks with their critical thinking approach can address this need. Their engineering, which consolidates learning and thinking and capacity to act self-sufficiently without requiring steady human Use of Artificial Intelligence in Healthcare Delivery. From this study it reveals that there is high relationship in accuracy of the diagnosis done in the hospitals by advanced technologies, patient information safety is ensured and patients are satisfied with the online consultation and treatments delivered. A key challenge for future governance of AI technologies should ensure that AI is developed used in a way that is transparent and compatible with public interest, whilst stimulating and driving innovation in the sector.

References

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