



Technological Ecosystems in Health Informatics: A Brief Review Article

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Abstract

Background: The existing models of information technology in health sciences have full scope of betterment and extension. The high demand pressures, public expectations, advanced platforms all collectively contribute towards hospital environment, which has to be kept in kind while designing of advanced technological ecosystem for information technology. Moreover, for the smooth conduct and operation of information system advanced management avenues are also essential in hospitals. It is the top priority of every hospital to deal with the essential needs of care for patients within the available resources of human and financial outputs. In these situations of high demand, the technological ecosystems in health informatics come in to play and prove its importance and role. The present review article would enlighten all these aspects of these ecosystems in hospital management and health care informatics.

Methods: We searched the electronic database of MEDLINE, EMBASE, and PubMed for clinical controlled trials, pre-clinical studies reporting utilization of ecosystem advances in health information technology.

Results: The primary outcome of eligible studies included confirmation of importance and role of advances ecosystems in health informatics. It was observed that technological ecosystems are the backbone of health informatics.

Conclusion: Advancements in technological ecosystems are essential for proper functioning of health information system in clinical setting.

Keywords: Ecosystems, Health informatics, Hospital administration

Introduction

Ecosystems are the information technology advancements being used worldwide for the efficient exchange of health information among health personal and patients (1, 2). A lot of work is being focused worldwide for improvement of security issues associated with the above technology (3). Benkler refers to economic and technological ecosystem as a dynamic structure, which entails of an interconnected population of organizations (4). On the other hand, Hadzic and Chang (5) group is inclined towards digital ecosystem design methodology for the health domain. Moreover, the same group also suggested that the analogy between information systems and biological systems could be extended into the systems design space.

The present review article is focused on the current views of ecosystem in the health sector.

Methods

We searched the electronic database of MEDLINE, EMBASE, and PubMed for clinical controlled trials, pre clinical studies, and research articles reporting utilization of ecosystem advances in health information technology.

Results

Importance of information system (IS) and information technology (IT) Planning in Health-care

The better planning is essential need at present in health sector for examining the potential utility of

ecosystems concepts in support of understanding the Hospital Management Information System (HMIS). The main problem predicted in firms involved in production of health information systems has been ruled out to be the prediction of the effects of future technological developments on the value of present technologies (5). Furthermore, a recent study presented another view describing information systems as assets of information advancements in the health sector (6). On the other hand, investigators from financial service industry highlighted the importance of planning with regard to inspiration to practitioners in health sector

Furthermore, a case study from the financial services industry specifically studied the issue of information systems planning. (7). Further, the impact of IS and IT planning might be, on planning and decisions in the hospital management environment. Organizations should dedicate towards establishment of a strategic plan in relation to key information systems acquisitions (8). Another explanatory research in the IT systems planning space in healthcare revealed that there is a range of different kinds of IT strategies in healthcare that require diverse decisions, investments and prioritized actions as well as differing implementation approaches (9).

IS and IT success and failure in healthcare

A key underpinning of this research is a desire to see more effective implementation and usage of information systems in the healthcare environment, and more particularly in the HMIS environment. There is certainly healthcare literature pointing to success and failure in relation to hospital information systems, and the reasons for it, but there is theory and some principles describing the success of IS as well as IT projects. For instance, importance of management support and the role of task interdependence as a moderating factor collectively contributed towards the success of information systems in hospital environment (10, 11). Moreover, end user training as well as moderating factors contributes a lot towards success of IT and IS ecosystems (11). Another study revealed 8 separate models of user accep-

tance of technology (12). Moreover, UTUAT - the Unified Theory of Acceptance and Use of Technology is another contribution of above study in the field of IS circles.

In terms of the potential for information technology to assist in health care, the possible gains are great. For instance, Gonzalez-Moler et al. studied the implementation of novel approach of telemedicine in the patients affected by diabetes (13).

Most of the potential benefits of information systems, in healthcare are collectively grouped in a study (14). The authors undertook a cost benefit analysis in relation to the implementation of an electronic medical record (EMR) system. Successful implementation of planning of IT and IS in health sectors resulted in ease of creation of medical records, decreased full time equivalent (FTE) employees and prevented adverse drug events too. Another, recent study reported potential benefits of IT planning success to the hospital managers of health IT systems (9). This implementation and duration of use of health information technologies resulted in better follow-up of medication guidelines at US hospitals.

Major gains can be achieved through the implementation of multifunctional, interoperable HIT systems. There are evidences supporting the successful IT implementation in healthcare (10-15). The collectively suggested many further insights can be obtained about IT planning and implementation in health care, it is possible that an examination of technology ecosystems could have a beneficial impact in this regard as a new lens through which to examine these issues.

Conclusion

This is obvious from above discussion that technological ecosystems are the key players in the successes of health informatics. Further, improvements in these ecosystems will definitely upshot in better health information management system in near future. The authors declare that there is no conflict of interest.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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