

SYSTEMATIC REVIEW

Characteristics of Innovation Culture to Improve Value Proposition of Hospital Service Performance: A Systematic Review

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ABSTRACT

Background: The innovation culture as a drive of value proposition has become prevalent in the hospital sector. Meanwhile, the value proposition is not certainly proven to improve the performance of better health services. Therefore, the review aimed to analyze the characteristics of the innovation culture that could increase the value proposition of service performance in hospitals. **Methods:** This research used a systematic review method for narrative analysis. The systematic search was performed through ProQuest and google scholar databases. The search keywords used “Boolean characterization and cultural innovation” and improved the value proposition and hospital service. Inclusion principles included quantitative studies and other studies relevant to the review; published between 2008-2021; the article was in English and full-text. **Results:** A total of 20 articles with varying subject characteristics were identified. The synthesis results showed that the value proposition improved service performance in the scope of point-of-care testing, PPE innovation, cancer management, mobile health (mHealth) and cybersecurity equipment, prosthetic tool innovation, robotic surgical equipment, medical laboratories, and pharmaceutical and vaccine business. **Conclusion:** The characteristics of the innovation culture to improve the value proposition of hospital service performance were found to be very diverse, focusing on all involved stakeholders and benefiting clinicians, patients, hospital management, as well as service providers through a value proposition that was promising to be applied for the development of better health services in the future.

Keywords: Value proposition, innovation culture, hospital performance.

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Introduction

As a driver of strategic organizational action, the innovative vision of the hospital sector has expanded and value-based healthcare is increasingly critical to ensuring high-quality yet cost-effective healthcare [1–3]. The value proposition in organizations is measured by looking at quality achievement through effectiveness, patient-centered care, safety, efficiency, equity, and compliance [4–7].

Various achievements used as a benchmark of the value proposition should be in line. For instance, it should be in line with improving efficiency and performance of hospital services for better service quality. This makes it challenging empirically to show the value proposition in healthcare.

Rising healthcare expenditure in some countries is driving a contemporary trend that focuses on value propositions, and most

efforts are made by increasing investment in science and technology innovation [6,8]. Meanwhile, the value of public innovation can be important, but it has not been shown that innovation always ends at a higher level of presentation. Most hospital innovations are seen as products, services or processes that tend to improve your organizational activity [9–11]. However, innovation has a limited impact on service performance if there is no change in organizational culture in the hospital.

Several studies have identified various strategies organizations use to streamline the implementation of innovations to improve hospital performance [11–14]. Overall, it proposes the importance of aligning stakeholder perspectives on the value proposition of services in hospitals. Therefore, this review aims to conduct a systematic synthesis related to various innovations that can increase the value proposition of service performance in hospitals.

Method

Research Design

This research used a systematic review method to analyze the characteristics of the culture of innovation in the face of narrative analysis, to improve the value proposition of hospital activity. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was used to show the flow at each stage of the review process, specifying the number and causes of exclusion of identified, hospitalized, and excluded records.

Data collection

The articles search used databases derived from ProQuest and google scholar. Search keywords used the Boolean “characterization and cultural innovation and improve the value proposition and hospital service.”

Inclusion Criteria

- (1) Quantitative and qualitative types of research and other research relevant to the research objectives;
- (2) The article discussed the value proposition;
- (3) Published between 2008-2021;
- (4) The article was in English;
- (5) The article was in full-text form.

Articles that met the criteria were extracted into a synthesis table containing the following elements:

- (1) Article titles;
- (2) Key issues;
- (3) Samples;
- (4) Instruments;
- (5) Research methods;
- (6) Research variables;
- (7) Research results;
- (8) Strengths;
- (9) Weaknesses.

Result

A total of 65,808 articles were identified for further screening, resulting in 22,487 articles being reviewed for abstract. In addition, articles that did not fit the topic of value proposition (13,914 articles) were excluded and filtered 20 articles that were ultimately synthesized (Figure 1).

Characteristics of the Study

Characteristics and design studies with varied subjects were patients with diabetes mellitus, clinicians, technicians, academics, industry workers, oncologists, cancer patients, patients with heart failure, worker groups, commercial products, and mHealth business projects. Research types included systematic review [15–17], experimental [18,19] literature review [20–26], scoping review [27,28], case study [29–31], meta-analysis [8], prospective interventional [32], and case report [33].

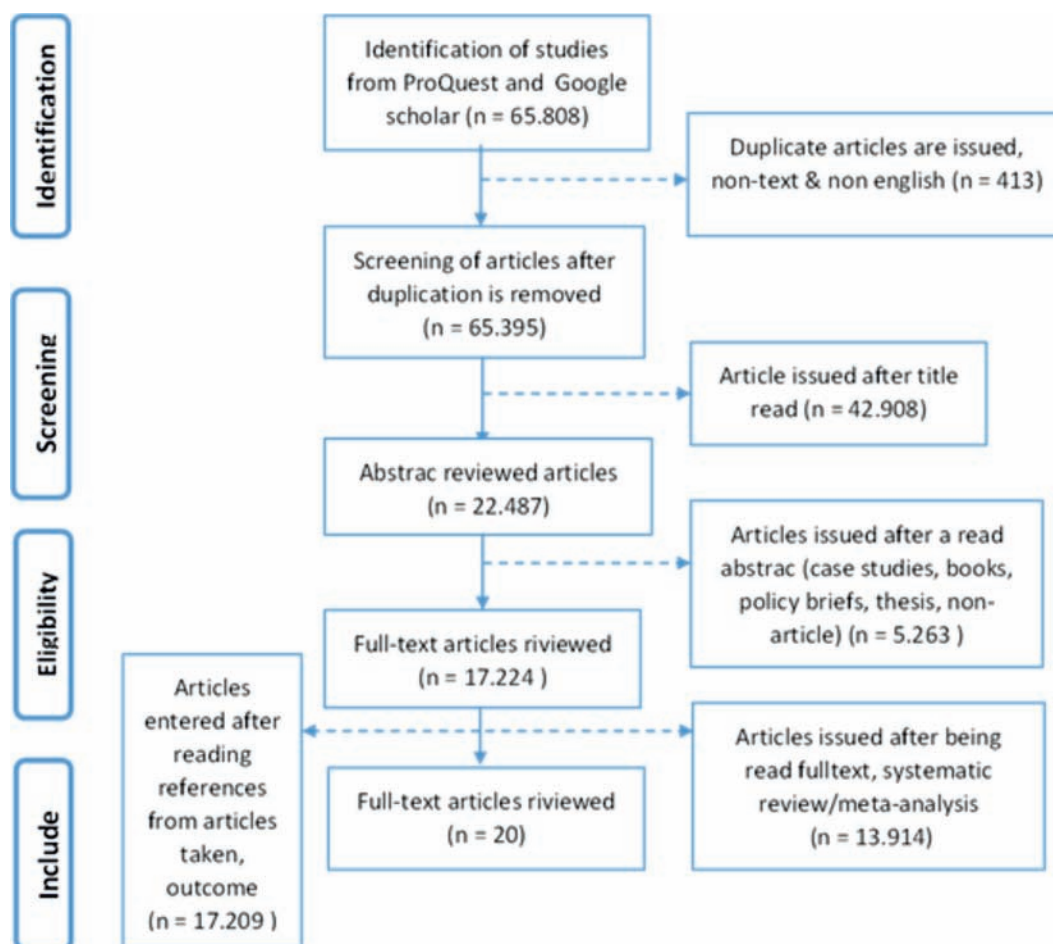


Figure 1: Flow chart of the number of articles collected by topic

Table 1: Various innovations in hospitals are associated with the value proposition

No.	Category	Type of Innovation
1.	Value proposition on medical test	Point-of-care testing (POCT) [15]
		Donor-derived cell-free DNA testing [43]
2.	Value proposition in PPE innovation	The design of face shields in the era of SARS-CoV-2 [34]
3.	Value proposition in cancer management	New medicines for breast cancer [35]
		Liquid biopsy [37]
4.	Value proposition on hospital information technology equipment	The future of wearables in heart failure [36]
		mHealth projects [40]
		Cybersecurity in hospital [38]
		Digital transformation and IT-enabled organizational transformation [45]
		Healthcare 4.0 technologies
5.	Value proposition in prosthetic tool innovation	Biomedical innovation in healthcare practice [39]
6.	Value proposition in medical laboratories and robotic surgical equipment	Robotic thoracic surgery [17]
		Microbiology testing tools [42].
		Pediatric medical devices [44].
7.	Value proposition in the pharmaceutical and vaccine business	Comprehensive medication management (CMM).
		Neglected tropical disease vaccines [41].

Innovation enhances the value proposition of hospital service performance

Table 1 summarizes the innovation types related to the categorization of value propositions. Sixteen types of innovations could increase the value proposition of hospital service performance, which mainly provided clinical and economic advantages as a value proposition with the main issues on technological advances, medicines, and diagnostic tests.

Discussion

Value propositions that improve service performance are found in the following scopes:

1. Value proposition on medical test

Several studies suggested the importance of a product and service's value proposition. The use of point-of-care testing (POCT) for the measurement of HbA1c can be an alternative that can be used as an option in increasing the value proposition. It is also an innovation that can be applied in healthcare, especially in hospitals, because the results obtained through this method are faster and benefit patients [15].

Donor-derived cell-free DNA testing is a promising value proposition to be carried out. It has good clinical and economic benefits for all involved parties in the transplant procedure (patients, doctors, medical laboratory specialists, hospital management, and insurance companies) [43].

2. Value proposition in PPE innovation

Value proposition of PPE in the form of short visors and longer visors can prevent the transmission of droplets, aerosols, and splatters through saliva and body fluids which are more innovative and cheaper than other PPE [34].

3. Value proposition in cancer management

Value proposition can be generalized based on a therapeutic product's price and clinical advantages and the dependence

level in disease treatment. The future expectation for breast cancer patients is that the framework and innovative medicines can be applied at a lower cost; therefore, it may be more profitable for patients [35].

The application of the liquid biopsy method is very promising in medical laboratories because of its specific use in detecting cancer. Value proposition is a fast detection process and more affordable in its method application [37].

A pathologist can implement the existing value proposition, so the challenges in health services can be overcome and maximized their existence properly for the advancement of population health in general through the use of existing facilities and innovations [46].

4. Value proposition on hospital technology information equipment

The hope that there will be equipment connected to the internet that patients with heart failure can utilize can be a promising and innovative value proposition in heart failure treatment in hospitals and other health care facilities in the future [36].

The value proposition of mHealth is very promising to be applied on a large scale. It can be seen from its advantages in helping to solve problems using mobile devices to facilitate the conversation of data and information among patients and health professionals. Mobile health (mHealth) is a technology that has the potential to recover access to health services in developed and developing countries [40].

The advantage of the value proposition of using cybersecurity is that hospital data can be maintained, and information can be accessed by users wherever they are while connected to the internet. It is a solution initiative to face the increasingly sophisticated digital era that hospital service providers can offer [38].

The value proposition of using information systems in

health services is considered beneficial for easier access to information between clinicians and patients. The value proposition of digital transformation is quite promising for future technological developments on an organizational scale, such as in hospitals and healthcare facilities. This is because digital transformation activities provide the benefits of digital technology in improving an organizational value proposition. Meanwhile, IT-enabled organizational transformation activities provide benefits of digital technology to support the value proposition [45].

Health 4.0 technology is one of the value propositions that can be offered to hospitals, as well as an innovation in health services related to the use of data and decision-making that all hospital stakeholders can utilize.

5. Value proposition in prosthetic tool innovation

Innovations related to the use of prosthetic tools in health services should continue to be developed following the advancement of science so that an appropriate value proposition can be obtained between patients, health services, and industries providing biomedical engineering products [39].

6. Value proposition in medical laboratories and robotic surgical equipment

Using the value proposition framework in medical laboratories provides effective and detailed guidance in conducting DNA mutase tests for cancer, which provide fast, accurate, and economically beneficial results for all individuals involved in disease management and therapy [43].

The use of tools in microbiological testing is beneficial in the clinical field and a promising value proposition to be implemented in the clinical area to answer the challenges and technological developments in health services [42].

Robotic thoracic surgery provides new hope that can be utilized in hospitals and health facilities as an innovation in the field of medicine to reduce costs during surgery and help ease the work and produce good outcomes for a surgeon [47].

The value proposition of pediatric medical devices, on an innovation scale, is quite hopeful because of the tools needed for pediatric patients to decrease the load of disease and recover the quality of life of pediatric patients [44].

7. Value proposition in the pharmaceutical and vaccine business

Business model theory and the internet are needed in the transformation of the medicines distribution to increase the value proposition of a pharmaceutical company that uses the model [48].

The value proposition of Comprehensive Medication Management (CMM) is considered very advantageous to be adopted in the primary health care system, especially for pharmacists, because they can work together with doctors in a more improved service model and play an essential part in determining the transition of main health care practices to services based on good values.

The value proposition of a vaccine that is predicted to assist people with Neglected Tropical Diseases (NTDs) is quite interesting to develop because the vaccine will help people who have NTDs and will benefit poor and developing countries if a vaccine is produced [41].

to increase the value proposition of hospital service performance. Some innovations can be implemented directly in the management of hospitals to improve access and improve health services. However, in the reviewed study, the product found was not entirely innovative. There was also a limitation in the cases obtained in the reviewed studies, as well as the absence of specific samples. In addition, some of the issues described are still in the form of ideas that have not been implemented.

Conclusions

The characteristics of the innovation culture to improve the value proposition of hospital service performance were found to be very diverse, focusing on all involved stakeholders and benefiting clinicians, patients, hospital management, as well as service providers through a value proposition that was promising to be applied for the development of better health services in the future. In addition, innovation in increasing the value proposition provides benefits in health, economics, organization, and hospital management sectors.

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