



VALUE CO-CREATION IN HEALTHCARE SERVICE A Systematic Literature Review

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Abstract

Value co-creation is crucial in business services as well as in healthcare services to enhance patient satisfaction. Active patient participation in value co-creation is critical in creating better and highly competitive services. Value co-creation can be achieved by interacting with healthcare providers and patients using integrated resources. Although research on the value of co-creation in healthcare has garnered attention, little effort has been made to systematically review the context of co-creation and the actors involved. This study aims to better understand value co-creation in healthcare from a management and business perspective. The research identifies the context of value co-creation, the actors involved, the theories adopted, the driving factors, the benefits, and the challenges faced. The Systematic Literature Review (SLR) method is used in this study, where 23 articles are identified and analyzed to answer a series of predetermined research questions. The article search was conducted using Harzing's Publish or Perish in 2022. The findings indicate that value co-creation benefits hospitals through competitive advantage, cost efficiency, profitability, and improved service quality. For patients, the perceived benefits include social experiences, patient centrality, and a better health community system.

Keywords: value co-creation, healthcare, systematic literature review

A. INTRODUCTION

Value co-creation has emerged as a competitive force for companies in an increasingly competitive business environment. Value co-creation became known after Vargo & Lusch (2004) introduced a new perspective in marketing known as the service-dominant logic (SDL). SDL views consumers not just as operand resources, which are resources upon which operations or actions are performed, but as operant resources, which can benefit by directly acting on other resources. Prahalad & Ramaswamy (2004) also recognized value co-creation as a mediator of supply and demand collaborating beyond existing value chains.

Value co-creation occurs through interaction or dialogue between consumers and service providers (Keeling et al., 2021), promising better service delivery efficiency (Best, 2019). define value co-creation as a joint process where value is reciprocally created by each actor (individuals, organizations, or networks). The concept of value co-creation assumes that consumers play an active role in creating value for companies, employees, and other customers (Ranjan & Read, 2016). Consumers are essential sources of information for companies because the knowledge possessed by consumers can help companies provide better services (Blazevic & Lievens, 2008). Grönroos & Ravald (2011) state that consumers and service providers who actively share knowledge, skills, and service literacy are drivers of value co-creation.

Research on value co-creation in healthcare has gained attention from researchers in recent years (Lin & Kishore, 2021; McColl-Kennedy et al., 2017; Zainuddin et al., 2016). However, few efforts have been made to review the context of co-creation and the actors involved systematically. Akter et al. (2019) suggest that shared healthcare services are increasingly gaining attention in developing countries

because offering services involving consumers in co-creation is more effective than traditional processes (Verma et al., 2012).

Participation and cooperation between patients and healthcare providers are essential in creating value and successfully treating illnesses (Sweeney et al., 2015; Zainuddin et al., 2016). Patients can share information about their complaints, ask doctors/nurses questions, provide feedback, and be involved in managing their illnesses, positively affecting health outcomes (McCull-Kennedy Hogan et al., 2017). Interaction among actors in patient care systems is crucial in driving value co-creation (Edvardsson et al., 2011). Some researchers also examine the importance of online health communities as sources of health information and social support (Aghdam et al., 2018; Chen, 2020; Shirazi et al., 2021; Stewart Loane et al., 2014).

Therefore, the purpose of this systematic literature review is, first, to identify the context of value co-creation in healthcare and the actors involved; second, to determine the theories adopted by each literature; third, to identify the driving factors for value co-creation; and fourth, to summarize the benefits and challenges faced in value co-creation. The manuscript is structured to provide clear information to readers about value co-creation in healthcare.

B. LITERATURE REVIEW

Value Co-Creation

Value co-creation in healthcare services is a crucial aspect that can significantly impact patient care quality. Research by Wong et al. (2021) emphasizes the positive influence of value-adding practices and value co-creation on hospital outcomes, highlighting the importance of collaborative efforts in enhancing value delivery in healthcare environments. This collaborative approach is also supported by Morovisconti (2021), who argues that value co-creation can benefit all stakeholders involved.

In the context of healthcare services, the concept of value co-creation extends beyond traditional service models. Kaneyama & Shirahada (2022) highlight the role of service-dominant logic and transformational service research in promoting change and well-being through collaborative processes. Ge & Miao (2021) state that digital platform businesses involve complex interactions between key stakeholders in value co-creation, which is becoming essential in modern business models. Additionally, (Hara et al., 2022) present a model of value co-creation dynamics with a focus on service systems. These findings underscore the multidimensional nature of value co-creation and its potential to drive positive outcomes in healthcare service delivery. Villaseñor & Yagüe (2021) emphasize the role of individual value co-creation in shaping user participation and enhancing value propositions in service provision. Furthermore, Zhou et al. (2022) highlight the importance of user experience and deep engagement as foundational elements of the value co-creation process. This aligns with the findings of Bordian & Saura (2021), who emphasize the impact of value co-creation on customer satisfaction and loyalty in the hospitality sector, highlighting the direct and indirect effects of co-creation on customer loyalty through increased satisfaction levels.

Innovative approaches to value co-creation in healthcare services are evident in the research by Alahmari et al. (2022). This study proposes a data-driven AI approach for healthcare service co-creation, demonstrating the potential to revolutionize healthcare systems through open, value-based service models that leverage freely available information for better preventive care, treatment, and support. These findings

highlight the transformative power of collaborative value co-creation in reshaping healthcare service delivery paradigms. These various studies' synthesis underscores value co-creation's critical role in improving healthcare services. By fostering collaborative efforts, leveraging digital platforms, and prioritizing customer engagement, healthcare providers can optimize value delivery, enhance patient outcomes, and drive sustainable progress in the healthcare sector.

C. METHOD

1. Research Questions

A systematic literature review identifies, analyses, and interprets all available research evidence relevant to a particular research question, topic area, or phenomenon of interest. This study is inspired by previous selection criteria approaches (Ahmed et al., 2019; Bhimani et al., 2019). The study refers to Bhimani et al. (2019) for methodological steps and to Ahmed et al. (2019) for data extraction and research questions. Specifically, this study aims to answer the following research questions (RQs):

- RQ1: In what contexts is value co-creation in healthcare conducted, and who are the actors involved?
- RQ2: What theories are adopted?
- RQ3: What are the driving factors for involvement in value co-creation?
- RQ4: What are the benefits and challenges of value co-creation?

The study aims to provide specific answers to these questions to enhance readers' understanding of the development of value co-creation in healthcare.

The study's goals were established to enable a broad scanning of articles. This study's articles were sourced from Harzing's Publish or Perish (using the Scopus database), a software tool that analyzes academic citations. Harzing's Publish or Perish retrieves raw citations using various data sources, analyzes them, and presents citation metrics and h-index. Searches with Harzing's Publish or Perish allow more specific and focused searches based on the highest citation ranks. Articles identified came from various publishers, including Science Direct and Emerald.

Keywords were used in the search for relevant literature. The search was conducted in January 2022 using Harzing's Publish or Perish. The final search string and inclusion-exclusion criteria are presented below:

- Keyword: ("value co-creation" OR "co-creation") AND healthcare
- Search in: title and keyword
- Language: English

The search results showed 41 papers with 475 citations published between 2007-2022. Out of the 41 papers, 18 were excluded for the following reasons:

- The document type was an opinion paper.
- Articles referring to value co-creation in pet care rather than human healthcare innovation.

The articles included in this study were saved in Mendeley reference management software to facilitate organization and retrieval. The stages of paper exclusion were as follows: First, all search results were ranked based on citation consistency and keyword accuracy (title, full-text availability, English language). The first stage resulted in 41 articles. Second, abstracts of all selected articles from Stage 1 were read. This step resulted in the selection of 38 articles. In the third stage, all selected articles from stage

2 were read fully, focusing on the value co-creation context, involved actors, enablers, theoretical foundations, and methodologies. This stage resulted in a final selection of 23 articles.

The categorization strategy adopted in this study resembles the principles applied by (Ahmed et al., 2019). The categorization includes the year, citation count, article type, and method. Specifically, it identifies aspects such as the context of value co-creation, involved actors, adopted theories, driving factors for value co-creation, benefits, and challenges faced.

Data extraction is one of the most critical stages in the systematic review process. In this step, the researcher developed a data extraction form to record all 23 studies' information accurately. The extraction process involved scanning each study and extracting relevant information using Microsoft Excel and Mendeley. Columns considered in this stage include study ID, paper title, year, paper type, context, methodology, and adopted theory.

2. Data Extraction And Synthesis For Slr (Systematic Literature Review)

a. Distribution of Publication Sources

The final articles selected were 23, published in the healthcare field related to value co-creation. The 23 papers were selected based on inclusion and exclusion criteria. The results showed that 20 were journal articles, and the remaining 3 were conference papers. Thus, it can be stated that journal articles are more popular than conference papers. Figure 1 shows the distribution of the papers used.

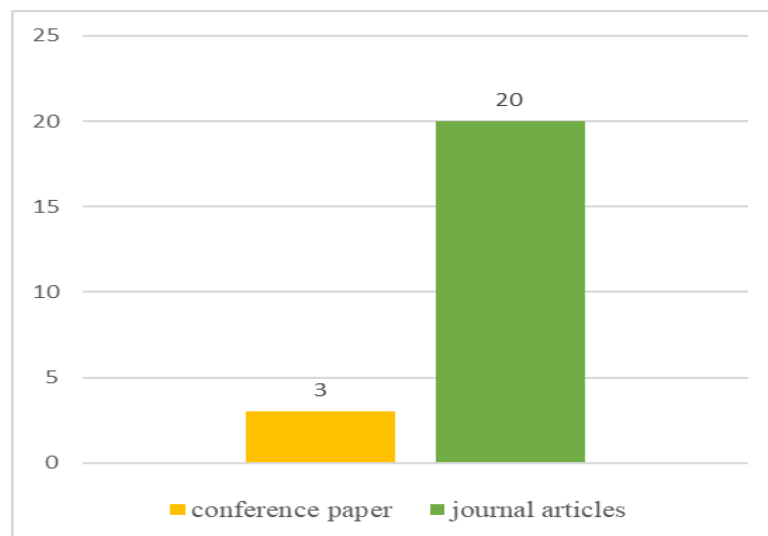


Figure 1. The Distribution of The Papers Used.

b. Year of Publication

The papers used in this study were published between 2007 and 2022. The most frequently used studies were from 2018 and 2021. There are several years where no papers were found because the search from Publish or Perish presents papers based on the number of citations. The extraction stage further sorted them based on the researchers' inclusion and exclusion criteria, resulting in 23 final papers used.

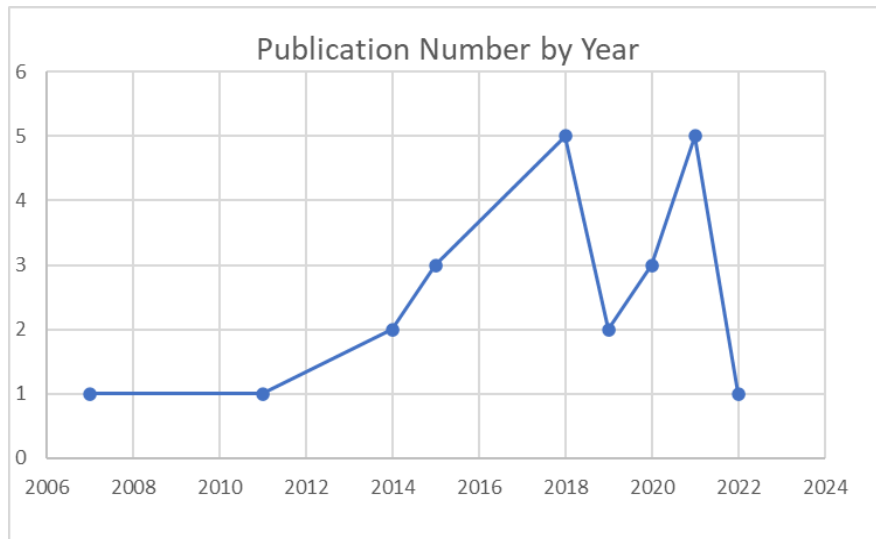


Figure 2. The Distribution of All Studies

The research methods used in value co-creation studies in healthcare include four types: qualitative, quantitative, mixed method, and conceptual papers. Qualitative methods were used in 11 studies, indicating the dominance of this approach in understanding the value co-creation process through in-depth interviews, participatory observation, and content analysis. Quantitative methods were used in 7 studies, involving collecting and analyzing numerical data to identify patterns and statistical relationships related to value co-creation. Mixed methods, combining qualitative and quantitative elements, were used in 3 studies, providing a more comprehensive perspective by leveraging the strengths of both approaches. Lastly, conceptual papers were used in 2 studies, focusing on developing theoretical frameworks and new concepts in value co-creation in healthcare services. Thus, it can be seen that most research in value co-creation studies uses qualitative methods, indicating a tendency to explore and understand this phenomenon deeply and contextually. Figure 3 presents the distribution of research methods.

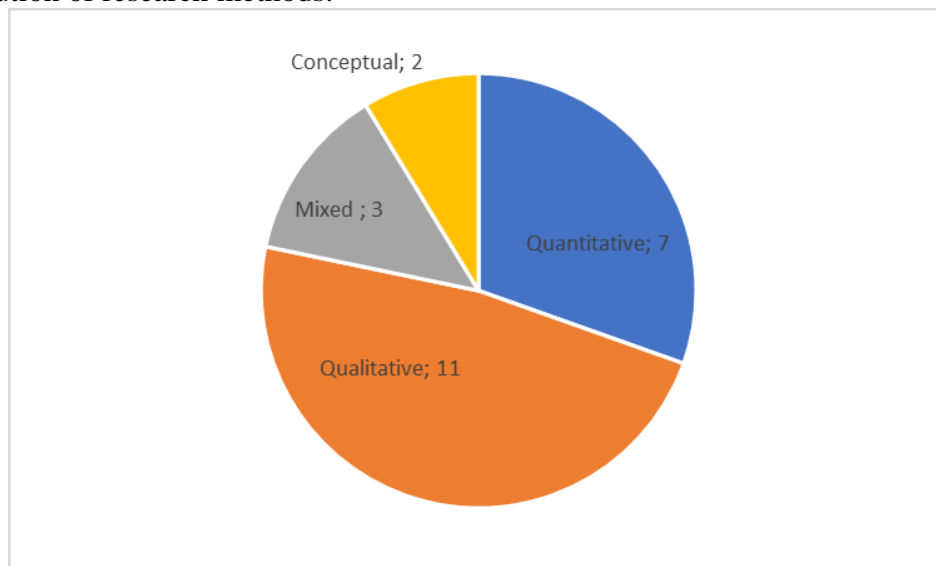


Figure 3. Distribution of Research Methods

D. RESULT

1. In what contexts is value co-creation in healthcare conducted, and who are the actors involved?

This study examines different contexts with the central theme of value co-creation in healthcare. The results show various forms of value co-creation contexts. These include developing value co-creation models, mobile innovations in pharmaceutical healthcare, and healthcare technology applications. Table 2 provides an overview of value co-creation contexts and the involved actors. The data shows that the actors involved in each context are diverse.

Table 2. Context and Actors in Value Co-Creation

Context	Actors Involved	Description	References
Value co-creation model for healthcare service	patient and doctor	The clinical meeting process between doctors and patients in the examination room can lead to value co-creation influenced by technological advancements and information accessible to patients via the Internet.	Osei-Frimpong et al., (2018).
		The value co-creation process between doctors and patients is driven by their experiences, emotional aspects, and functional attributes in the consultation room. Studies show that patients do not always consider "healing" as the only value sought, but also the total experience undergone during the examination process.	Osei-Frimpong et al., (2015)
	Patient and healthcare providers (hospital, doctor, nurse)	Healthcare providers require feedback from patients regarding service satisfaction to improve communication channels between patients, doctors, and nurses and develop service improvement strategies.	Zhang et al. (2015)
Mobile innovations in pharmaceutical healthcare	patients, pharmaceutical companies, suppliers of mobile innovation, providers of hardware, government decisions, other professional groups, and content providers)	User involvement in developing mobile innovations in hospital pharmacies evolves as technology advances. Pharmacists and supplier companies collaborate with doctors, nurses, and others to participate in medication use and develop recommendations for patients. Studies have found that mobile applications allow doctors and pharmacists to access patient medical data quickly.	Andersson & Rosenqvist (2007)
Digitalization of healthcare	Providers (occupational health nurses, contact centre advisors), employees (patients) and employers (owners)	Digitalizing healthcare services empowers stakeholders to engage in interactions that create shared value.	Balta et al. (2021)

Context	Actors Involved	Description	References
	Patients and medical staff	With the support of advanced technology applications, healthcare systems have significantly contributed to creating quality value. Service providers (hospitals or clinics) can offer services such as online consultation appointments, allowing doctors to connect visually with patients.	Akter et al., (2022; Lee, (2019)
Evaluation of a digital platform	patients, healthcare professionals and other stakeholders, Developers, Financier and External help (The market research company)	The results show that digital platforms facilitate communication between innovators and stakeholders	Tončinić et al., (2020)
Online healthcare communities	Patients, doctors, and members of online health communities	Online health communities can meet the unmet needs of patients, but the critical role of healthcare professionals is still needed to ensure the quality of information within these communities.	Van Oerle et al., (2018)
	users of the Top 10 healthcare-based pages on Facebook	Patient involvement in the community can enhance decision-making related to their treatment and improve their quality of life.	Shirazi et al., (2021)
Social Media Usage	patients, their friends, and families, caregivers, and organizations	Using social media, patients can collaborate with their friends and families, caregivers, and organizations to produce new knowledge.	Bagayogo et al., (2014)
ridesharing services for non-emergency	(1) Healthcare organizations, such as clinics or pharmacies; (2) companies providing vehicle fleets for non-emergency medical transportation; (3) healthcare professionals, such as doctors, nurses, and physiotherapists; (4) drivers	Customers can book vehicles by entering pickup locations and destination addresses using a sharing economy platform. Customers can benefit from using technology tools and booking on-demand or scheduling trips according to their needs.	Schiavone et al., (2020, 2021)
emergency medical service system model	Patients, family and caregivers; healthcare Providers and ICT providers	Value creation for emergency patients (seniors) is achieved through collaboration among emergency participants to support communication in nursing preparation, patient transportation management, and personal health monitoring. Co-created value can include well-being, life confidence,	Sukkird & Shirahada, (2015)

Context	Actors Involved	Description	References
		increased health knowledge, cost efficiency, service quality and accessibility, and an active service system.	
AI and co-create value in B2B industrial markets.	Physicians, analysts, patients, policymakers, and customers	Technology providers and customers in the B2B healthcare ecosystem, such as hospitals and service organizations, can generate high-quality service innovations by leveraging AI.	Leone et al. (2021)
patients self-monitoring handheld devices	Patients and doctors	Patients with chronic illnesses such as diabetes can use handheld devices to self-monitor their health conditions, such as blood pressure, blood glucose levels, and heart rate.	Hau & Thuy, (2021)
The Role Of Technology In Value Co-Creation Of Maternal Healthcare	Patients (pregnant women), midwives, obstetricians	Actors in the maternal healthcare ecosystem integrate resources as they provide services to pregnant women.	Nyende (2018)
hospital-supplier relationships	Hospitals and suppliers	The extent of joint activities related to planning, standardization, and implementation of patient care processes involving hospitals and suppliers.	Chakraborty (2018)
Healthcare supply chain	Manufacturers, distributors, group purchasing organizations, and hospitals	DART can be conceptualized as a supply chain practice to improve the quality of healthcare services	Chakraborty & Dobrzykowski (2014)
patient empowerment	Patients and healthcare providers (hospitals, doctors, nurses)	Patient empowerment enables them to take an active role in the value co-creation process, which positively correlates with patient satisfaction	Moretta Tartaglione et al., (2018); Gill et al., (2011)

a) What theories are adopted?

Table 4: Theories dan Framework Value Co-creation pada Healthcare Service

Theories and Framework	References
Service-Dominant Logic	(Balta et al., 2021; Chakraborty, 2018; Chakraborty & Dobrzykowski, 2014; Gill et al., 2011; Hau & Thuy, 2021; Kim, 2019; Lee, 2019; Leone et al., 2021; Moretta Tartaglione et al., 2018; Nyende, 2018; Osei-Frimpong et al., 2015, 2018; Schiavone et al., 2020; Sukkird & Shirahada, 2015; Virlée et al., 2020; Zhang et al., 2015)
Social Cognitive Theory	(Kim, 2019)
Relational View Theory	(Chakraborty, 2018)

Table 4: Continued..

Theories and Framework	References
Relational Coordination Theory	(Chakraborty, 2018)
Socio-Technical Theory	(Shirazi et al., 2021)
DART Framework	(Akter et al., 2022; Chakraborty, 2018; Chakraborty & Dobrzykowski, 2014)

b) What are the driving factors for actor involvement in value co-creation?

The review results conducted by (Osei-Frimpong et al., 2018) show that the availability of online health information is an essential factor driving value co-creation. Information obtained by patients from online resources, including the Internet and patient community forums, can enhance the quality of meetings between patients and doctors in the consultation room. It is essential for hospitals or healthcare providers to provide complaint services and conduct patient satisfaction surveys (Gill et al., 2011), or it can be done by giving feedback forms (Zhang et al., 2015). Social skills of doctors, such as empathy, friendliness, and respect for patients, are essential attributes in the co-creation process conducted in consultation rooms, shaping the patient's experience during the treatment process (Osei-Frimpong et al., 2015). (Moretta Tartaglione et al., 2018) suggest the need for patient empowerment, a communicative process developed between healthcare professionals and patients. Findings from (Hau & Thuy, 2021) imply the need for patients' abilities as crucial operant resources in creating co-creation.

Advanced technology support hospitals or healthcare providers provide, such as online appointment bookings via websites, can help patients interact indirectly with medical staff. Services connected visually with patients, such as routine checks to home healthcare using e-conferencing (Lee, 2019). Thus, hospitals must provide a beneficial value-creation environment with advanced technology support, easy access, and credibility. Research findings from (Sukkird & Shirahada, 2015) reveal that telecommunication infrastructure is a supporting technology in value co-creation among actors. The existence of such infrastructure can enhance communication quality, including advice provision, monitoring, reminders, health records, and tele-healthcare.

Nyende (2018), who conducted a study in the context of maternal healthcare, found the need for a supportive environment for actors (patients (pregnant women), midwives, obstetricians, and hospitals) to integrate resources. Hospitals must provide information sites on maternal health, nutrition sites, pregnancy complications identification, visit schedules, and doctor practice schedules. In maternal healthcare, IT is a resource enabling institutional documentation and procedure standardization through ISO quality standards.

In the context of the sharing economy, value co-creation is driven by digital ridesharing networks in healthcare (Schiaivone et al., 2021). The sharing economy platform affects healthcare networks because digital network creation can quickly and easily provide value to stakeholders involved in healthcare ridesharing services. The primary value of the sharing economy platform lies in the software's ability to drive customer experience sharing (Heutger & Kückelhaus, 2017).

Patients increasingly use online health communities to meet their health needs in the current digital era. Being part of online communities can be oriented towards

healing (functional) and care (emotional) (Van Oerle et al., 2018). The findings also show that online health communities can identify and address issues with patient needs. However, healthcare professionals still play a role in ensuring information quality in online health communities. Service providers must provide online chat support with agents through social media to facilitate value co-creation. There is a need for IT infrastructure design, connectivity, system integration, data storage security, and technological security as per patient needs (Shirazi et al., 2021).

c) What are the benefits and challenges of value co-creation?

Benefits of Value Co-Creation

Value co-creation receives attention because it has been proven to benefit consumers and service providers (Vargo et al., 2017). The existence of value co-creation in healthcare consultation rooms can build patient commitment to comply with medical instructions from doctors (Hau & Thuy, 2021; Osei-Frimpong et al., 2018). Interactions and relationships among actors influence improving patient service quality (Gill et al., 2011; Zhang et al., 2015). Value co-creation impacts service satisfaction (Kim, 2019; Schiavone et al., 2020). Service innovation in the form of service innovations and improved operational practices. Satisfied patients will develop relationships with healthcare providers, resulting in better continuity of healthcare outcomes (Moretta Tartaglione et al., 2018).

Resource integration in healthcare services benefits patient well-being by comprising four components (Virlée et al., 2020). These components include (1) psychological, such as feelings of depression, worry, and sadness about the future; (2) existential, which is the belief that life is valuable and self-perception; (3) support, where patients feel supported and cared for; and (4) physical components such as fatigue, pain. These results are supported by Van Oerle et al. (2018), who found the benefits of value co-creation in cure and care. Patient involvement in online communities can also enhance decision-making related to treatment and improve quality of life (Shirazi et al., 2021).

Schiavone et al. (2020) reveal the benefits of value co-creation for hospitals and patients. For hospitals, value co-creation provides benefits in the form of competitive advantage, cost efficiency, profit, and service quality. For patients, the perceived benefits include social experiences, patient centrality, and a health community system.

Challenges of Value Co-Creation

Value co-creation between patients and medical staff also faces challenges. The first challenge is that not all patients are willing to engage in co-creation, considering the patients' capabilities and competencies (Gill et al., 2011; Osei-Frimpong et al., 2018). On the other hand, online information searches can lead to conflicts, resulting in negative experiences in the consultation room. Some doctors tend not to involve patients in decision-making and believe that patients trust the doctors' judgment to provide the best care for their interests (Andersson & Rosenqvist, 2007; Osei-Frimpong et al., 2018).

Healthcare providers also face challenges in creating adequate physical environments to support communication. Older consumers prefer quietness or need personalized services and rely more on others. Such patients are willing to pay high for customized services (Kim, 2019). Creating value with patients means healthcare professionals must understand patients' needs and goals, requiring costs to train

healthcare professionals (Moretta Tartaglione et al., 2018). Regarding providing patient feedback in value co-creation, Zhang et al. (2015) reveal that converting feedback for system-wide improvement is challenging. Privacy and technology security are attractive issues to discuss as patient data storage on technology-based devices increases (Sukkird & Shirahada, 2015). Privacy and security issues are barriers that disrupt the value co-creation process in online health communities (Shirazi et al., 2021). Balta et al. (2021) state that challenges related to digitalization in healthcare services include incomplete patient records and privacy issues regarding patients' personal health information. In the sharing economy-based approach, challenges include customers' and healthcare operators' lack of knowledge, potentially disrupting value co-creation (Schiavone et al., 2020).

E. CONCLUSION

The synthesis of various studies indicates that value co-creation is essential in enhancing healthcare services. Active patient participation and cooperation with healthcare providers can improve care quality, cost efficiency, and patient satisfaction. Qualitative methods dominate this research, indicating a tendency to deeply explore and understand this phenomenon. Collaborative efforts, leveraging digital platforms, and prioritizing customer engagement are crucial to optimizing value delivery and driving sustainable progress in the healthcare sector.

Future research should develop quantitative studies to provide concrete data on the effects of value co-creation in healthcare services. Further qualitative research can also deepen the understanding of patient and healthcare provider experiences in the value co-creation process. Combining both approaches will provide a more comprehensive and in-depth perspective.

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