Telemedicine Health Service Innovation and Patient Satisfaction in West Java

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Abstract

This study aims to analyze the relationship of telemedicine innovation with inpatient satisfaction, using health care facilities in Bandung, West Java. This study uses a qualitative approach by using triangulation, so it involves three respondents, namely patients using telemedicine, prospective patients using telemedicine, and doctors in health care facilities, with a total of 9 informants. Data were collected utilizing semi-structured interviews. The results revealed that in previous studies clinical atmosphere, quality, cost, and communication were frequently used to assess patient satisfaction. Therefore, this study shows from another perspective and provides a lot of evidence with a high level of security, speed, up-to-date, credibility, and ease of processing are important factors that can also promote patient satisfaction. The novelty was obtained by analyzing patient satisfaction in dental and oral health facilities in Indonesia as a unit of research analysis that had never been done in previous studies.

Keywords
health facilities; relationship; telemedicine health; service innovation; patient satisfaction;

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1 Introduction

The health sector is a major public need that needs attention throughout the world. Issues that need attention are related to patient satisfaction problems that occur in various parts of the world, including in Indonesia. Based on research in 32 countries, shows that patient satisfaction in countries in the world is still relatively low, which is worth 34% (Deswani, 2017). Meanwhile in Indonesia, patient satisfaction ranges from 34% to 43%. Asia Pacific Observatory on Health Systems and Policies, 2017. This figure is still far from the ideal condition of patient satisfaction, which is at least 80%.

According to Danarahmanto et al. (2022), security, speed, up-to-date, credibility, ease of the process, and also access are important things that can encourage patient satisfaction. For areas of Indonesia that have a large population, access to health is something that needs to be considered. Based on data from the Ministry of Health of the Republic of Indonesia (2018), it is known that 59.71% of urban people in Indonesia find it difficult and very difficult to access health facilities, while 92.97% of rural people find it difficult and very difficult to access health facilities.

West Java is one of the most densely populated areas in Indonesia Central Statistics, Agency, (2020), which has obstacles to accessing health services. As many as 73.6% or 33 million people in West Java find it difficult to access health facilities. Ministry of Health of the Republic of Indonesia. This is one of the causes of the low level of satisfaction with health services in West Java. This phenomenon is reinforced by data from the West Java Government through the Public Service Information Network in 2019, which shows that hospitals in West Java receive poor satisfaction ratings, such as the Pameungpeuk Regional General Hospital which scores less than 76, and there are no hospitals yet generally get a rating above 90 or a very good rating.

Various ways are done to facilitate the access of the general public and patients to access health facilities, to increase satisfaction, one of which is by using telemedicine. (Putra, 2016). The World Health Organization defines telemedicine as the delivery of health care services, where distance is an important factor, by all health care professionals using information and communication technology for the exchange of valid information for the diagnosis, treatment, and prevention of diseases and injuries, research and evaluation, and continuing education of health care providers, all in the interest of advancing individual and community health (Weinstein et al., 2014; Moazzami et al., 2020).

The use of telemedicine in Indonesia has experienced a significant increase. Based on data from the Ministry of Communication and Information of the Republic of Indonesia (2020), the use of telemedicine during the pandemic increased by 600%. This shows that people are starting to adapt to health service innovations. On the other hand, community satisfaction has not shown a maximum assessment. (Budianto, 2019). Whereas previous research explains that the presence of telemedicine can increase patient satisfaction.

Based on the phenomena described, this study examines the effect of telemedicine on patient satisfaction in West Java. In previous studies, no one has conducted telemedicine research and patient satisfaction in West Java. Meanwhile, this study contributes to exploring the relationship and influence of telemedicine on patient satisfaction in West Java.

This research consists of several parts. The first section is a review of the relevant literature and the development of a theoretical framework and hypotheses. Second, an explanation of methodology and data collection. Third, data analysis and discussion. The last section is the conclusion and implications of this research (Nylén & Holmström, 2015; Lee et al., 2015).
Literature review

Patient satisfaction

Patient satisfaction is a patient’s subjective assessment of medical services and staff, and it is important to use this perspective to measure and validate satisfaction measurement instruments. Customer satisfaction is the result of comparing the performance or something the company produces with customer expectations, which creates a sense of pleasure and disappointment. According to Bulechek et al. (2018), there is a relationship between service company customer satisfaction and organizational performance.

Customer satisfaction is associated with innovations such as telemedicine that can increase the efficiency of medical services. Some researchers say that increasing efficiency, employee performance, and service quality can increase customer satisfaction. According to Faiqoh & Hendrati (2017), customer satisfaction can be achieved by increasing the rationality of expectations, providing a great service experience, and increasing motivation to recommend a product or service. Another study states that increasing efficiency, employee performance, and service quality can increase customer satisfaction. The satisfaction can be assessed by considering the services provided, the patient’s willingness to recommend services, and the patient’s willingness to return (Dougall et al., 2000; Boudreaux & O’Hea, 2004).

Telemedicine

According to Herdam et al. (2018), telemedicine is a health practice using audio, visual, and data communication, including treatment, diagnosis, consultation, and treatment as well as medical data exchange and scientific discussion remotely. Telemedicine is an important part of treatment. Telemedicine has been able to bring doctors’ hands out of their practice rooms and touch sick people who live far away in remote areas.

According to Purnamaningrum (2014), telemedicine allows the practice of health services with the location of doctors or patients being geographically separated. Meanwhile, telemedicine and virtual care have the potential to increase access to, and efficiency of, treatment by overcoming several barriers to effective and sustainable care, including access challenges, costs, and time constraints.

Highlighting patient satisfaction which currently has a very important role in the health care environment. The use of telemedicine can support institutions to be able to provide quality services. Research finds that patient expectations are met when providers provide healthcare via video conferencing or other telemedicine methods. Telemedicine is a viable option for providers who wish to extend services to remote areas without having to relocate or expand the service area.

The relationship between telemedicine and patient satisfaction

According to Fauziah et al. (2016), telemedicine leads to client satisfaction and an increase in their quality of life, increasing flexibility, agility, and mobility. Overall, satisfaction rates were high for patients undergoing telemedicine visits, patients were more confident during follow-up visits and with the use of video for telemedicine. Telemedicine is a technological innovation that can be useful in increasing patient satisfaction. Meanwhile, according to Danarahmanto et al. (2020), innovation can encourage the creation of a sustainable business.

Another study explains that the presence of telemedicine can increase patient satisfaction. According to Baksh et al. (2022), all the patients studied were satisfied with the services provided by telemedicine Nadesul (2010), and the majority of patients preferred the combination model between telemedicine and in-person visits. The use of telemedicine is related to patient satisfaction, where patient satisfaction is very important for clinical outcomes and is related to costs, and plays an important role in the sustainability of health care.

2 Materials and Methods

This study used a qualitative explanatory approach. The sampling technique used in this research is *purposive sampling* (Sugiyono, 2017). This technique is used to determine the research sample with certain considerations so that the data obtained can later be representative.

In this study, the validity test was carried out using triangulation of sources, so that it involved three respondents, namely patients, doctors, and nurses in dental and oral health facilities. The research informants were 3 informants. According to Hennink & Kaiser (2021), qualitative research requires 9 to 17 informants who are interviewed in depth. All selected informants are telemedicine actors and users domiciled in West Java. The selected informants were 9 people, consisting of 3 patients who had done telemedicine consultations, 3 prospective requesters for telemedical consultation, and 3 doctors. The selection of informants was carried out in the context of triangulation to get several points of view.

Data was collected through in-depth interviews using semi-structured interviews. The purpose of in-depth interviews allows a focused focus on the topic. Through semi-structured interviews, authors can use open-ended questions and allow for additional information.

3 Results and Discussions

Description of informants

In this study, the respondents involved were patients who were accustomed to using telemedicine (33.3%), patients who were interested in using telemedicine (33.3%), and doctors who were accustomed to serving telemedicine (33.3%). Determination of patients, both patients who had done telemedicine and Patients who are interested in using telemedicine as informants are done because the patient is the main party who receives telemedicine services and gives an assessment of satisfaction with telemedicine services. Meanwhile, doctors are involved as informants because they are directly related parties as telemedical service providers. (Mutmainnah et al., 2017). The nine informants involved are informants aged between 17 and 35 years, who are already familiar with information technology.

Interview result

Interviews in this study were conducted in July 2021, conducted using in-depth interview techniques. Excavation of patient satisfaction was carried out through a semi-structured interview technique, which was carried out by making the main questions and then developed following the flow of conversations with informants at the time of the interview (Salim et al., 2015). Several research questions represent useful indicators for exploring the relationship between telemedicine and patient satisfaction (McMullan, 2006; Sin et al., 2005).

Based on the overall observation results, the majority of informants stated that telemedicine affected patient satisfaction in health facilities in West Java. The results of interviews conducted with patients who have used telemedicine and prospective patients using telemedicine showed positive responses, one of which stated that “the facilities are good and supported by complete, fast telemedicine services, the doctor’s response increases satisfaction” (Senoaji, 2012). In addition, doctors as health service providers through telemedicine, give a neutral response in the form of positive responses by assuming that telemedicine offers ease of service but also gives negative responses about the weaknesses of telemedicine, "the drawback of telemedicine is that it is only unable to perform a physical examination which reduces the variety of services that can be provided."

The informants also view positively the telemedical facilities provided by the service providers. According to prospective patients requesting telemedical services, "yes, it’s good to have online medical services, this telemedical facility service is relevant to the existence of safer and more practical health protocols". (Wagiy & Putrono, 2016). Based on this expression, it can be seen that prospective telemedicine patients have the perception that telemedicine can offer convenience and can also encourage the creation of satisfaction.

These results are reinforced by positive responses stating that the presence of telemedicine can make it easier for patients to get health services. According to one patient who already uses telemedicine,
"Telemedicine makes services fast, makes it easier for people who are sick, to be treated by doctors". (Syahdrajat, 2015). Telemedicine is very useful for connecting health workers and patients in situations where it is not possible to meet. This was supported by another patient who stated, "I feel that it is easier for me to seek treatment remotely".

Based on the results of the interview, it is also known that there is an influence between the presence of telemedicine and the desire for someone to recommend the health facility. After this telemedical user is satisfied with the service provided, there will be an intention to repurchase or come back so that over time they will recommend it to family, relatives, and friends on social media, the three informants responded positively as expressed by those who serve telemedicine consultations (Wirajaya & Widya, 2015). "Yes, with good telemedicine I will automatically post to social media".

Based on the results of interviews with all informants on the three research topics, three types of answers were obtained, namely answers that had a positive effect, answers that had a negative effect, and answers that were neutral or had no effect. The summary of responses from the interviews can be seen as follows.

Table 2

<table>
<thead>
<tr>
<th>Question</th>
<th>Telemedicine Patient</th>
<th>Patient Prospective Telemedicine Users</th>
<th>Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you view the service facilities and examinations carried out by health facilities through telemedicine?</td>
<td>(+)</td>
<td>(+)</td>
<td>(N)</td>
</tr>
<tr>
<td>How do you think telemedicine affects your intention to repurchase/come back to a health facility?</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
</tr>
<tr>
<td>How do you think telemedicine affects your willingness to recommend health facilities?</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
</tr>
<tr>
<td>Description: (+) Positive answer; (-) Negative answer; (N) Neutral answer</td>
<td></td>
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</table>

The changing times have had an impact on the healthcare industry. Various adaptations and adjustments to the service process are needed, one of which is the presence of telemedical services. This study aims to gain a deeper understanding of the effect of telemedicine on patient satisfaction. This study explores telemedicine and patient satisfaction from the point of view of doctors, patients using telemedicine, and prospective patients using telemedicine on patient satisfaction in health care facilities (Nataliia et al., 2021).

The results of this study confirm that the presence of innovation in the form of telemedicine affects the creation of patient satisfaction. These results support the research of Astriana (2016), which states that telemedicine innovation can encourage the creation of customer satisfaction. It also strengthens the research that state that telemedicine can support the creation of patient satisfaction. The patients assessed that telemedicine could provide better and easier services. The presence of telemedicine also supports the speed and response of services that can be received by patients.

These results are in line with research by Pitriani & Andriyani (2014), this explains that telemedicine can lead to patient satisfaction because it increases the flexibility and agility of the services provided. The results of this study indicate that the presence of telemedicine affects the patient’s intention to repurchase or come back to visit health facilities. The convenience that the patient gets through telemedicine makes the patient not traumatized to come back again so that the patient is willing to return to the health care facility. In addition, the presence of telemedicine as a facility that offers convenience to patients can also encourage patients’ desire to recommend health care facilities to others. Patients who feel helped by the presence of telemedicine voluntarily submit their reviews and recommendations both online and online channels using social media.

The results of this study support the results of previous research conducted by Danarahmanto (2021), which stated that satisfaction can be assessed by considering the services provided, the patient’s willingness to recommend services, and the patient’s willingness to return. In this study, the use of telemedicine was proven to encourage good judgment from patients, encourage patients to come back, and recommend to others.

On the other hand, the presence of telemedicine also has drawbacks for the services provided. The services provided through telemedicine are in the form of remote services, where patients cannot physically interact with doctors (Sihombing et al., 2017). The services provided have limitations so that often patient complaints cannot be handled optimally by doctors. This is very impactful, especially for patients who need physical services, such as dental health services and surgical procedures.

Based on the results of this study, several implications can be obtained. This study can be used as a reference to explore the impact of telemedicine on patient satisfaction in health care facilities in West Java (Utami, 2018). The results of this study can be utilized by healthcare facilities, in West Java, and in Indonesia in general, to achieve patient satisfaction so that they can survive in today’s competition in the healthcare industry. This research can help leaders of health care facilities to increase patient satisfaction by utilizing innovations in the form of telemedicine utilizing digital technology.

The findings of this study indicate that patient satisfaction in health care facilities can be achieved by presenting innovations that meet patient needs (Subekti, 2018). Innovations created must be able to accommodate patient needs related to convenience, speed, security, and practicality of health services through digital-based innovations. Telemedicine is an alternative digital-based innovation that can be utilized by health care facilities in providing services that suit the needs of patients.

The results of this study can be used as a reference to examine the effect of telemedicine on patient satisfaction at health care facilities in West Java. In West Java, there has been no research involving telemedicine and patient satisfaction variables associated with health care facilities (Wahyuningsih, 2019). Therefore, this research will certainly provide new theoretical insights regarding the combination of patient digital experience and innovation in West Java.

There are several limitations to this study (Sholihah et al., 2019). First, this study examines institutions engaged in the health care industry in Indonesia, so that there can be differences in the interpretation of research results for companies outside Indonesia. Therefore, further research is needed for cases outside Indonesia. Second, this study does not describe the relationship between indicators and dimensions in depth. Third, research involving healthcare facilities may result in different results for other industries outside the healthcare industry.

Many aspects affect the creation of patient satisfaction that encourage the sustainability of a health institution, one of which is the quality of health services. According to Arthina (2015), there is a positive relationship between the quality of health services and patient satisfaction. Therefore, further research is expected to explore the relationship between telemedicine and the quality of health services as a support for creating patient satisfaction.

4 Conclusion

This study offers perspective and provides evidence that telemedicine is an important thing that can promote patient satisfaction. This is because telemedicine is an innovation that provides convenience, speed, security, and practicality for patients to obtain health services. On the other hand, the results of this study also offer another opinion, namely the weakness of telemedicine which has limitations in carrying out actions that require physical contact between patients and doctors. Therefore, it is highly recommended for health care facilities to implement telemedicine to support the services provided to patients, so that it is expected to encourage creation of patient satisfaction. Further research on the relationship between health service quality and patient satisfaction needs to be carried out as a complement to the application of telemedicine in health care facilities in West Java.

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Was lecturer, researcher, and entrepreneur. He received degree in informatics from the Telkom University, degree in creative industries from Institute Kesenian Jakarta, degree in innovation management from Bandung Business School, and doctor in business management from Padjadjaran University in 2019.

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