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# Referral Healthcare Services and Efficiency of Indonesian Health Insurance on Patient Satisfaction and Life Quality

**Muhammad Alfarizi[1*], Lissa Rosdiana Noer[2], Rafialdo Arifian[3]**

[1-2]Department of Business Management, Faculty of Creative Design and Digital Business, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

[3]Department of Medical Doctor, Faculty Of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

*e-mail*: 6031241004@student.its.ac.id

**Abstract:** The UN's Sustainable Development Goals (SDGs) target Universal Health Coverage (UHC) to ensure equitable access to health without financial burden. The National Health Insurance Program-Healthy Indonesia Card (JKN-KIS) by BPJS Kesehatan seeks to meet the health needs of the Indonesian people, especially vulnerable groups, including in East Java, which faces many cases of catastrophic diseases. This study aims to analyse the impact of the quality of referral health services and the efficiency of insurance administration on the satisfaction and quality of life of catastrophic patients in East Java. This study uses a positivist quantitative approach with a questionnaire-based Cross-Sectional design to collect data from outpatient catastrophic patients in East Java. Two hundred sixty-three responses were analysed using the PLS-SEM technique through SmartPLS 4.0 software to test hypotheses regarding the quality of referral services, insurance administration, patient satisfaction, and quality of life. The results showed that the ease of JKN-KIS administration significantly affected participant satisfaction, corroborating previous findings regarding the importance of easy access and simple administrative procedures in increasing the positive perception of services. In addition, the quality of referral health facility services also increases satisfaction, especially in meeting the care needs of catastrophic patients. Satisfaction with JKN-KIS also significantly impacts patients' quality of life, improving their physical health, emotional stability, and social satisfaction. These findings encourage optimising JKN-KIS services through digitisation and improving the quality of special services for catastrophic patients to maintain participant satisfaction and trust.

***Keywords:*** Administration, Health Services, National Health Insurance, Patient Satisfaction, Quality of Life

## INTRODUCTION

The Sustainable Development Goals (SDGs), launched by the United Nations, aim to achieve sustainable development by 2030, including ensuring healthy lives and well-being for all (SDG 3). Universal Health Coverage (UHC), a key target of SDG 3, seeks to provide access to quality

healthcare without financial burden (Hossain et al., 2024). UHC requires health system reforms, infrastructure improvements, and equitable services, particularly for vulnerable groups (Wallengren et al., 2024). In Indonesia, the 1945 Constitution mandates access to health services for all citizens (Ardiansah & Silm, 2020). To meet this, the government launched the National Health Insurance-Healthy Indonesia Card (JKN-KIS) in 2014 (Salim, 2020). The program has two categories: PBI (government-subsidized) for the underprivileged and Non-PBI (self-funded) for other groups (Prasja et al., 2023). Improving equity includes developing the Standard Inpatient Class (KRIS) system and ensuring equal treatment for all participants (Mz et al., 2023).

The existence of JKN-KIS is crucial in handling catastrophic diseases in Indonesia. Catastrophic diseases, which include severe medical conditions such as cancer, heart disease, and chronic kidney disease, often result in very high medical costs. (Situmeang & Hidayat, 2018)JKN-KIS is designed to provide financial protection for participants so that they are not trapped in the heavy cost burden of the disease. Through a tiered referral system, JKN-KIS participants can access health services from health centres to high-end hospitals according to their medical needs. The program guarantees that all health services related to catastrophic diseases will be covered, except for certain conditions not covered by the regulations. (Solida et al., 2023)Financing for catastrophic diseases absorbs most of BPJS Kesehatan's budget, which shows the magnitude of the disease's economic impact. (Hildayanti et al., 2021).

East Java Province is one of the regions that face serious challenges related to catastrophic diseases, which are health conditions that require high medical costs and have a significant impact on people's quality of life. Diseases such as cancer, stroke, and heart failure are the leading causes of death in Indonesia, including in East Java. Cardiovascular disease is one of the dominant catastrophic diseases in Indonesia, including in East Java, with a total of 144,279 cases in 2018-2019 (Sandi et al., 2019). Heart disease accounted for the first and second catastrophic costs, accounting for 18.5% of health financing for catastrophic in 2023-2024. Cancer and Kidney Failure are also the leading causes of catastrophic costs in East Java (Kustiyanti, 2023). BPJS data shows that the provinces of East Java, West Java, DKI Jakarta, and North Sumatra have the highest financing for cancer services (Meidayanti & Nurwahyuni, 2023). The high prevalence of catastrophic cases in East Java Province requires excellent health services due to the complexity of diagnosis and treatment. High-quality care ensures that patients receive appropriate and effective treatment, which is crucial to increasing the chances of recovery (Williams & Radnor, 2022). In addition, straightforward financing administration is also crucial to reduce the financial burden of patients (Jackson et al., 2016). The efficient and transparent claims process in health insurance helps patients access medical services without barriers. With optimal services and a transparent financing

system, patients can focus on recovery without worrying about high costs or delays in receiving the necessary care.

In neoclassical consumer theory, the individual's primary goal is to maximise utility, often understood as the level of satisfaction obtained from consumption. (Costa et al., 2021). Some researchers associate quality of life (QoL) with utility theory, where QoL is considered something individuals want to achieve (Buselli et al., 2020). However, efforts to achieve QoL often face various obstacles, such as health problems. This is especially true when individuals have to face unexpected financial stress due to a catastrophic chronic illness. The disease carries physical, emotional, and financial impacts that patients and their families often feel even after treatment ends. (del Pozo-Rubio et al., 2019).

Several studies have explored the relationship between health insurance and user satisfaction in different countries. For example, Geng et al. (2021) found that comprehensive health insurance improves patient satisfaction with chronic diseases in China. (Geng et al., 2021). Kaplan et al. (2017) identified that insufficient insurance coverage can reduce patient satisfaction in the United States. (Kaplan et al., 2017). Meanwhile, Pahlevan Sharif (2017) showed that factors such as locus of control also affect patients' perception of the quality of health services in Iran. (Pahlevan Sharif et al., 2021). Other European research emphasises the importance of quality of service in improving patient satisfaction, especially for those with catastrophic diseases. (Jürges & Stella, 2019). The study shows that the effectiveness of health care and insurance administration plays a vital role in the patient experience.

Although many studies have examined the relationship between health insurance and user satisfaction, there is a gap in understanding, especially regarding JKN-KIS in the Indonesian context. Studies on the impact of referral health services and the efficiency of insurance administration on catastrophic patient satisfaction are still limited. Previous research has shown that patient satisfaction can decrease if the insurance policy does not cover the expected services. (Kaplan et al., 2017). However, no research has directly examined how the quality of referral services and the efficiency of insurance administration affect the satisfaction and quality of life of cancer patients in East Java. This study aims to analyse the impact of the quality of referral health services and the efficiency of insurance administration on the satisfaction of catastrophic patients and their quality of life under the JKN-KIS program in East Java.

## METHOD

This study chooses a positivist quantitative approach with a cross-sectional questionnaire-based research design. This approach was chosen to obtain relevant and representative data regarding the experience and satisfaction of catastrophic patients under the JKN-KIS program. By using

questionnaires, the study was able to collect systematic and structured information from respondents over some time, allowing for a more efficient analysis of the variables associated with the study selected an analysis unit of patients who were undergoing routine outpatient treatment at an advanced referral health facility (Hospital) in East Java Province. This selection aims to obtain relevant data regarding patient experience and satisfaction with insured health services and the administrative process of JKN-KIS insurance. This study develops a research model based on the hypothesis proposal shown in Figure 1.


**Figure 1. Proposed Research Model**

Hypothesis 1: Ease of National Health Insurance Administration has a significant positive effect on National Health Insurance Satisfaction
Hypothesis 2: Quality of Referral Health Facility Service has a significant positive effect on National Health Insurance Satisfaction
Hypothesis 3: National Health Insurance Satisfaction has a significant positive effect on Patient's Quality of Life (QoL)

The questionnaire instrument was developed by referring to relevant previous research for each variable. The Ease of National Health Insurance Administration variable was measured using ten items adapted from the study. (Daramola et al., 2017; Merlis, 2014), which includes ease of access, administrative procedures, and transparency. The instrument, based on the study, consists of 10 items for the Quality of Referral Health Facility Service variable. (Abu-Salim et al., 2017; Sarker et al., 2018), covering aspects of facilities, medical personnel competence, and service quality. Meanwhile, the National Health Insurance Satisfaction variable, which includes as many as five items, and the Patient's Quality of Life (QoL) variable, which includes as many as six items, refer to the research. (Hofstetter et al., 2023; Pahlevan Sharif et al., 2021), includes general satisfaction and the patient's quality of life. All constructs were operationalised into structured statements, measured using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This approach ensures a consistent and reliable measurement of respondents' perceptions across all dimensions, allowing for precise data analysis and comparison.

This study uses a purposive sampling technique to target the population of patients enrolled in the JKN-KIS program across Indonesia. Respondents must meet the criteria of being a catastrophic outpatient with a diagnosis of Cancer, Heart, Chronic Kidney, Mild Stroke, Chronic Obstructive Pulmonary Disease, Diabetes Mellitus and Autoimmune (Lupus, Rheumatoid, etc.), not in an emergency condition or hospitalisation to not interfere with the treatment process, domiciled in the East Java Region and the treatment process using JKN-KIS insurance within a minimum treatment period of 6 months. The minimum sample was determined using the G*Power approach with the criteria of effect size of 0.15 (moderate), alpha error rate of 0.05, power of 0.8, and two dependent variables. Based on the analysis results from G*Power, this study requires at least 68 respondents to produce representative data.

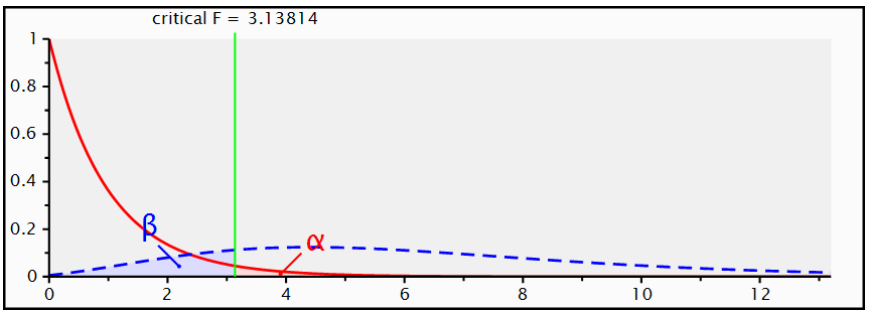


**Figure 2. G*Power Minimum Sample Analysis Graph**

The data collection process is hybrid, with data collected through Google Forms and disseminated through social media to reach a broader range of respondents. The researcher also visited affordable respondents directly to ensure participation and minimise barriers to accessing technology due to health conditions by answering researchers' questions. This technique helps collect data efficiently, with respondents filling out questionnaires independently at flexible times.

Research ethics are carried out by ensuring informed consent, where respondents are given complete information about their objectives, procedures, and rights to participate in or withdraw from research at any time without consequences. The confidentiality of personal data is guaranteed by storing information anonymously and only using it for academic purposes. The study ensured that respondents' participation would not interfere with their treatment and considered convenience and safety in the data collection. From the outset, the researcher provided an overview of the study, along with the researcher's profile and affiliated institution, to ensure that respondents were well-informed about the legitimacy of the research. Initially, 263 respondents participated in this study, with a screening process based on the completeness of information and answers, resulting in 250 respondents who were worthy of analysis. Table 1 illustrates the characteristics of respondents based on demographics and further patient health.

**Table 1. Characteristics of Respondents**

| | Total | Percentage |
|---|---|---|
| ***Gender*** | | |
| Man | 66 | 26% |
| Women | 184 | 74% |
| ***Origin of Agglomeration Areas*** | | |
| Gerbangkertosusila Area (Gresik, Bangkalan, Mojokerto, Sidoarjo, Surabaya City, Mojokerto City) | 64 | 26% |
| Malang Raya Area (Malang, Malang City, Batu City) | 51 | 20% |
| Mataraman Area (Madiun, Magetan, Ngawi, Ponorogo, Pacitan, Trenggalek, Tulungagung, Nganjuk, Kediri, Madiun City, Kediri City | 50 | 20% |
| Tapal Kuda Area (Banyuwangi, Situbondo, Bondowoso, Jember, Lumajang, Probolinggo, Probolinggo City) | 23 | 9% |
| Madura Area (Bangkalan, Sampang, Pamekasan, Sumenep) | 38 | 15% |
| Pantura Area (Tuban, Lamongan, Bojonegoro) | 24 | 10% |
| ***Age*** | | |
| 25-34 Years | 12 | 5% |
| 35-44 Years | 36 | 14% |
| 45-54 Years | 107 | 43% |
| 55-64 Years | 95 | 38% |
| ***Last Education*** | | |
| Junior High School | 30 | 12% |
| High School | 87 | 35% |
| Diploma/Bachelor | 93 | 37% |
| Master/Doctorate | 40 | 16% |
| ***Outpatient Care Catastrophic Diagnosis*** | | |
| Heart Disease | 13 | 5% |
| Mild Stroke Disease | 15 | 6% |
| Stage 1-2 Cancer | 11 | 4% |
| Diabetes Mellitus | 75 | 30% |
| Kidney Failure | 9 | 4% |
| Chronic Obstructive Pulmonary Disease (COPD) | 60 | 24% |
| Autoimmune diseases | 67 | 27% |
| ***Hospital Admission Pathway*** | | |
| Primary Health Facility Referral | 202 | 81% |
| Emergency Lines | 48 | 19% |
| ***JKN-KIS Financing Scheme*** | | |
| JKN-KIS Contribution Assistance Recipients (PBI) | 147 | 59% |
| JKN-KIS Non-PBI-Wage Recipient Workers | 75 | 30% |
| JKN-KIS Non-PBI-Non-Wage Recipient | 28 | 11% |

This study uses the Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis technique with the help of SmartPLS 4.0 software. PLS-SEM was chosen because it is suitable for modelling complex relationships between latent variables and their indicators; SmartPLS 4.0 is used to simplify the analysis process with interactive visualisation features and ease of interpretation of results (Becker et al., 2023).

## RESULT

### Validity and Reliability Testing

The validity and reliability testing in PLS-SEM at the Measurement Outer Model stage aims to ensure that indicators or items in the model can measure constructs accurately and consistently. Validity and reliability are evaluated through several vital criteria. First, the Average Variance Extracted (AVE) value should be >0.5, which indicates that the construct successfully explains more than 50% of the indicator's variance. (J. F. Hair et al., 2017). Second, the Cronbach Alpha value must be >0.7 to indicate the internal consistency of the indicators in the construct (J. F. Hair et al., 2021). Finally, Composite Reliability should also be >0.7 to measure the combined reliability of all indicators in measuring construction (J. F. Hair et al., 2021) The validity and reliability test results in Table 2 show that the AVE value for each variable is also above 0.5, so the associated construct explains more than 50% of the indicator's variance. Cronbach's Alpha (CA) and Composite Reliability (CR) on all constructs are more significant than 0.7, indicating good internal consistency and high composite reliability.

**Table 2. Validity-Reliability Test Results**

| Variable | AVE | CA | CR |
|---|---|---|---|
| Ease of National Health Insurance Administration | 0.526 | 0.852 | 0.877 |
| Quality of Referral Health Facility Services | 0.595 | 0.891 | 0.906 |
| National Health Insurance Satisfaction | 0.700 | 0.889 | 0.920 |
| Patient’s Quality of Life | 0.763 | 0.936 | 0.950 |

### *Results of Hypothesis and Coefficient of Determination Testing*

In PLS-SEM, hypothesis testing and determination coefficient (R-squared) are crucial in assessing the relationship between latent variables. Hypothesis testing is carried out through a bootstrapping procedure, which is used to estimate the significance of paths between variables in the model. Bootstrapping involves randomly sampling the original data and calculating path coefficients repeatedly, resulting in t-statistics and p-values to determine the significance of the influence between constructs (Streukens & Leroi-Werelds, 2016). The hypothesis is considered significant if the t-statistics > 1.96 at a significance level of 5%. On the other hand, the determination coefficient test (R-squared or R2) measures the amount of variation described by the independent variable to the dependent variable (J. et al. et al., 2019). The R-Square value ranges from 0 to 1, where the higher the value, the greater the variation of the dependent variable that the model can explain. PLS-SEM suggests R-Square values of 0.75 (strong), 0.50 (moderate), and 0.25 (weak) as a reference, thus aiding in the evaluation of overall model fit (J. Hair et al., 2017). Figure 3 and

Table 3 illustrate the bootstrapping output and the results of the hypothesis-determination coefficient test.

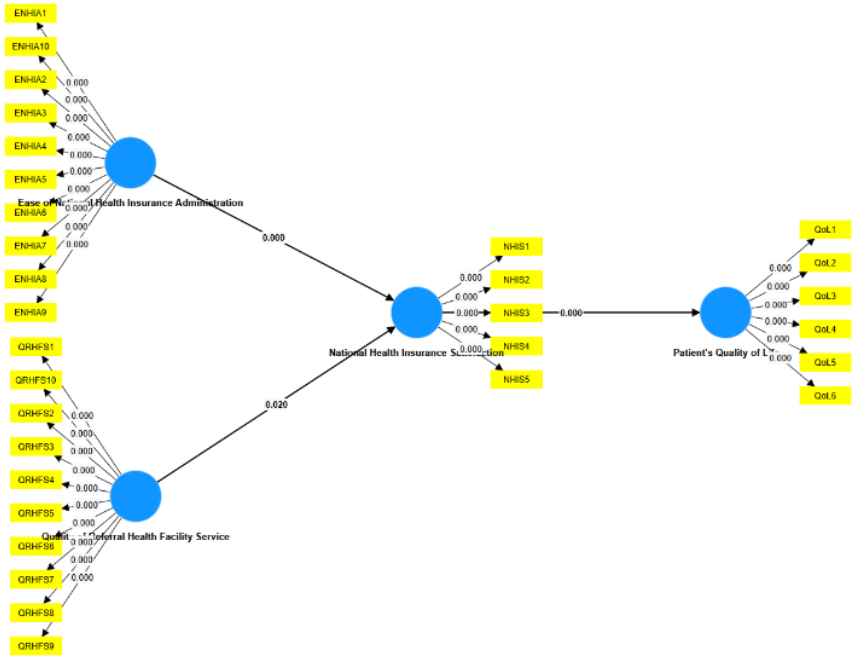


**Figure 2.** Output Bootstrapping

The results of hypothesis testing in Table 3 showed that the entire hypothesis in the model was accepted, with a p-value below 0.05, which means significant. A path coefficient 0.405 between the Ease of National Health Insurance Administration and National Health Insurance Satisfaction indicates a significant favourable influence. In addition, the Quality of Referral Health Facility Service significantly positively influences National Health Insurance Satisfaction, with a path coefficient of 0.173. The third hypothesis shows the most potent effect, 0.730, of National Health Insurance Satisfaction on Patient's Quality of Life, supported by the highest t-test (22.435). These results confirm the positive and significant relationship between the variables in the model.

The results of the determination coefficient test in Table 3 show that the model has strong predictive power. The variables Ease of National Health Insurance Administration and Quality of Referral Health Facility Service explain 68% (R-squared = 0.680) of the variability of National Health Insurance Satisfaction, indicating the significant influence of these two factors on participant satisfaction. In addition, National Health Insurance Satisfaction explained 73.2% (R-squared = 0.732) of the variability of Patient's Quality of Life, indicating that JKN-KIS service satisfaction substantially impacts the patient's quality of life. This high R-squared value indicates that the model explains the relationships between variables well.

**Table 3. Results of Hypothesis and Coefficient of Determination Testing**

| Hypothesis | Path Coefficient | t-test | p-value | Decision | R-Square |
|---|---|---|---|---|---|
| Ease of National Health Insurance Administration → National Health Insurance Satisfaction | 0.405 | 4.575 | 0.000 | Accepted | 0.680 |
| Quality of Referral Health Facility Service → National Health Insurance Satisfaction | 0.173 | 2.328 | 0.000 | Accepted | |
| National Health Insurance Satisfaction →Patient's Quality of Life | 0.730 | 22.435 | 0.000 | Accepted | 0.732 |

## DISCUSSION

### The Effect of Ease of National Health Insurance Administration on National Health Insurance Participant Satisfaction

The results of the first hypothesis test show that the ease of national health insurance administration significantly affects national health insurance satisfaction. These results align with previous research, which found that the ease of administration of national health insurance services is closely related to user satisfaction. (Getaneh et al., 2023; Ridiarsih et al., 2024). These findings indicate that the ease of administrative processes, such as registration, claims, and access to health services, is one of the main factors affecting JKN-KIS user satisfaction. When administrative procedures are easy for participants to understand and execute, a more positive experience is created, increasing satisfaction. Participants felt that JKN-KIS services met their expectations of providing affordable health protection without sacrificing service quality, especially for community groups that previously had difficulty accessing health care. One of the main reasons ease of administration affects satisfaction is the user's perception of the administrative burden. The complicated administrative burden can create additional stress for participants, especially in emergencies where they need medical help as quickly as possible. When administration becomes simpler, participants can focus on their health needs without facing unnecessary additional obstacles. This directly contributes to improving the quality of participants' experience when using health services covered by JKN-KIS.

In a broader analysis, the acceptance of this hypothesis can be perceived as JKN Mobile's interest in the national health insurance administration process. Applying more advanced technologies, such as digitisation of administrative processes, mobile application development, or

automation of claims processes, can be considered strategic steps to optimise existing systems. This digitisation makes it easier for participants to access information and services and manage and monitor them by health service providers and JKN-KIS managers. The positive impact of this easier administration is not only felt in individual satisfaction but also has the potential to increase public participation and trust in the JKN-KIS program. Thus, the effectiveness of the national health insurance program in providing fair and equitable health services can continue to be maintained and developed.

For catastrophic patients, the ease of administration of JKN-KIS is crucial, especially considering the urgent and ongoing medical needs. For patients with chronic diseases or conditions that require intensive care, such as cancer or heart disease, easy administration helps them focus on treatment without having to get caught up in complicated procedures. Efficient administrative processes, from referrals to claims, significantly affect the satisfaction and quality of life of catastrophic patients who rely on JKN-KIS to gain access to costly and long-term care. For example, the JKN Mobile application can be a practical solution for catastrophic patients in East Java, allowing them to quickly obtain service information, file claims, and access referral status. This simplification and digitalisation help reduce the administrative burden, which has been the main obstacle. Hence, it can potentially increase the positive perception of the quality of services and health support received through JKN-KIS.

**Quality of Referral Health Facility Services and Their Impact on National Health Insurance Participant Satisfaction**

The results of the second hypothesis test show that the quality of referral health facility service significantly affects national health insurance satisfaction. These findings are consistent with previous research that shows responsive, quality, and easily accessible referral services encourage higher levels of satisfaction because participants feel their health needs are optimally met. (Adewole et al., 2022; Tefera et al., 2021). These findings show that JKN-KIS user satisfaction depends on the administrative and access aspects and the quality of services received at health facilities, especially in referral facilities such as hospitals. Adequate service quality is essential for JKN-KIS participants who need follow-up care, where the reliability and competence of referral facilities greatly determine the treatment results they get. In this case, the quality of service in referral facilities can include several essential elements, such as the suitability of diagnosis, speed of service, adequacy of facilities, availability of drugs and medical equipment, and competence of health workers.

One of the reasons for the importance of quality of service in referral facilities is the high need for JKN-KIS participants for advanced care and medical specialities that can only be provided in referral facilities. In the case of more complex diseases, the quality of service at the referral facility

is decisive for treatment success. Quality referral health facilities can provide services that meet standards, thereby increasing the effectiveness of the JKN-KIS program in meeting public health needs. In addition, the quality of services at referral facilities is closely related to participants' perceptions of the government's commitment and BPJS Kesehatan's commitment to providing adequate access to health services for all levels of society. If the quality of service at the referral facility is well maintained, participants will feel recognised and appreciated as part of the national health insurance system. This can ultimately increase public trust in JKN-KIS and maintain participant loyalty to the program.

The quality of referral health facility services is a crucial factor that affects the satisfaction and quality of life of catastrophic patients. Those with severe conditions, such as cancer or heart disease, require intensive and ongoing care at referral hospitals, so a high standard of service is urgently needed. Fast and responsive referral services, such as the availability of medical equipment, competent medical personnel, and easy access to follow-up treatment, can help catastrophic patients feel safer and cared for. The existence of quality referral facilities for JKN-KIS participants has a direct impact on the treatment experience of catastrophic patients, as they often require complex and expensive medical procedures. Continuous improvement in this referral service can increase patients' confidence in JKN-KIS while ensuring they receive equal and optimal protection in the national health insurance system.

**The Relationship between National Health Insurance Satisfaction and Patient Quality of Life**

The results of the final hypothesis test found a significant positive effect of national health insurance satisfaction on the patient's quality of life. Previous studies have revealed that easier access and lower costs, supported by adequate services, increase patient satisfaction with insurance, improving the physical, emotional, and social aspects of their quality of life (Pahlevan Sharif et al., 2021). Theoretically, satisfaction with JKN-KIS services can indicate the quality of health services. According to the theory of subjective well-being, a positive perception of the services provided can improve the overall quality of life, especially for individuals who rely on health services to meet their medical needs. If patients are satisfied with the services they receive, they may experience reduced stress levels, an increased sense of security towards health conditions, and increased trust in the health system. This is consistent with the theory that the perception of public services impacts psychological well-being, further improving the quality of life. This significant positive effect can also be explained through a domino effect: Patients satisfied with JKN-KIS services may be more motivated to use health services earlier and more routinely. They are more likely to have regular check-ups or follow preventive health programs offered, which have the potential to prevent more

severe health conditions. Finally, this can lead to improved quality of life characterised by better physical health, fewer illnesses, and increased emotional stability.

From the perspective of catastrophic patients, satisfaction with JKN-KIS services has more profound implications. They rely heavily on fast, effective, and quality healthcare to maintain or improve their quality of life. Efficient referral services and timely insurance administration are the main factors that affect their satisfaction. If these aspects go well, catastrophic patients tend to feel safer and more financially secure, which reduces anxiety related to high medical costs. The positive impact of adequate JKN-KIS services can also be seen from their increased motivation to undergo continuous care and conduct regular check-ups, which can help maintain the stability of health conditions. This study emphasises that catastrophic patients' satisfaction with JKN-KIS services can significantly improve their psychological well-being and quality of life, especially in severe and challenging health conditions.

## CONCLUSION

This study concludes that the ease of administration and the quality of services of referral health facilities significantly affect the satisfaction of JKN-KIS participants, positively impacting their quality of life. Ease of administration, such as simplifying claim procedures and accessing information through digital applications, allows participants to access services without barriers, increasing satisfaction and positive perception of health insurance services. In addition, the quality of services at referral health facilities, especially in terms of speed, accuracy of diagnosis, and competence of medical personnel, greatly determines patient satisfaction, especially for those with chronic health conditions that require ongoing care. This satisfaction improves the patient's quality of life physically and emotionally and increases their trust in the JKN-KIS system. The results of this study can encourage the government and BPJS Kesehatan to continue to optimise the quality and accessibility of JKN-KIS services to maintain the sustainability and effectiveness of the national health insurance program.

Practical recommendations are intended for BPJS Kesehatan to prioritise strategies to improve the ease of administration and quality of referral health facility services for catastrophic patients. BPJS Kesehatan can implement a more structured case management program for catastrophic patients, such as cancer or heart disease. In this program, special officers or case managers will assist patients in managing long-term treatment plans, helping them access the care they need, handling administrative constraints, and coordinating between health facilities. This assistance will significantly help catastrophic patients in overcoming administrative burdens. BPJS Kesehatan can expand access by forming a network of exceptional hospitals to handle catastrophic diseases. Hospitals in this network can have more complete facilities, a fast referral process, and specially

trained medical personnel to handle catastrophic diseases. This can prevent long queues and speed up access for catastrophic patients to the specialised services they need.

The availability of ambulance services needs to be integrated with the BPJS Kesehatan system and emergency service centres for catastrophic patients to ensure faster access in critical conditions. In addition, medical teams in the field can be given exceptional guidance to handle emergency conditions for catastrophic patients. Next, the development of a digital health monitoring feature that allows catastrophic patients to report their condition periodically through the JKN Mobile application. This data can help BPJS and hospitals monitor patient health developments more proactively, provide timely treatment, and identify emergency conditions faster.

This research has several limitations that need to be considered. First, the primary focus on ease of administration and quality of referral services may overlook other factors, such as participants' psychological and socio-economic support, affecting the satisfaction and quality of life of catastrophic patients. Second, the research sample is limited to JKN-KIS participants in certain regions, so the results may be less representative of the participants' experiences in areas with more limited access to health facilities. For future research, more in-depth studies of psychosocial factors and their impact on catastrophic patient satisfaction may provide new insights for service improvement. Additionally, future research could employ a retrospective cohort design to explore causal relationships between healthcare services and patient satisfaction thoroughly. The study can also expand the scope of the sample area to capture the variation of participants' experiences in various regions, especially in rural and remote areas.

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