J Prima Med Sains (2024) 6(1):10-108
https://doi.org/10.34012/jpms.v5i2.4622

ORIGINAL ARTICLE

The Effect of BPJS Online Tiered Referral System Health on Patient Satisfaction at Royal Prima Hospital

Johannes Bastira Ginting*

Abstract

The National Health Insurance System (JKN), managed by BPJS, is a strategic initiative of the Indonesian government to ensure access to affordable and quality health services. This study aims to evaluate the effect of an online tiered referral system on patient satisfaction at Royal Prima Hospital. This study was conducted at Royal Prima Medan Hospital from February to March 2019 using a non-experimental quantitative method with a descriptive approach and associative analysis. Data was collected through an online questionnaire survey involving 100 respondents and analyzed using the Chi-Square test and multiple logistic regression. This method was chosen to evaluate the relationship between independent variables and patient satisfaction quantitatively. The results of the analysis showed a significant relationship between several variables and patient satisfaction, such as ease of requirements ($p = 0.010$), service procedures ($p = 0.017$), service time ($p = 0.006$), cost efficiency ($p = 0.001$), and facilities/infrastructure ($p = 0.020$). In contrast, variables such as product specifications ($p = 0.268$) and executor competence ($p = 0.200$) were insignificant. Multivariate analysis showed that cost efficiency had the highest Odds Ratio (OR) of 7.516, indicating that patients who perceived higher cost efficiency were 7.516 times more likely to be satisfied. Recommendations for BPJS Kesehatan include improving cost efficiency, service time, and hospital infrastructure to improve patient satisfaction.

Keywords: cost efficiency, service procedures, patient satisfaction, health services.

Introduction

The National Health Insurance System (JKN), managed by the Social Security Administration for Health (BPJS), is one of the Indonesian government's strategic steps to ensure everyone can access affordable, high-standard healthcare services.[1] The main goal of JKN is to provide financial protection to the community in the face of rising healthcare costs.[2] With this system, it is hoped that all individuals, including the underprivileged, can access adequate health services without being burdened by high costs. One of the critical aspects of JKN is the tiered referral system.[3] Within this framework, patients must first receive services at a First Level Health Facility (FKTP), such as a health center or clinic, before being referred to a higher-level hospital, such as type B and A hospitals, ensuring that patients receive appropriate treatment according to their health needs. Along with technological advancements, BPJS Kesehatan has introduced an online tiered referral system, allowing patients to register and submit referrals digitally. This innovation streamlines the referral process, improving efficiency and enhancing patient access to health services while potentially improving the patient experience.[4]

Patient satisfaction is a crucial indicator in evaluating the success of healthcare services, especially within public services.[5] According to Permenpan RB No. 14 of 2017 concerning Guidelines for the Preparation of Community Satisfaction Surveys for Public Service Implementation Units, measuring satisfaction needs to be done systematically and objectively, considering various aspects such as service quality, ease of access, and responsiveness of healthcare workers.[6; 7] In this study, assessing how implementing the online tiered referral system affects patient satisfaction at Royal Prima Hospital is crucial. Following these guidelines, the study aims to analyze the relationship between the BPJS Kesehatan online tiered referral system and patient satisfaction levels. The findings from this research will provide valuable

Affiliation
[1]Faculty of Public Health/Master of Health Study Program, Academy/Institute/University Adiwangsa Jambi, Jambi, Indonesia
Correspondence
johannesbastiraginting@unprimdn.ac.id, 0821.6571.8787

insights for BPJS Kesehatan and other stakeholders in enhancing healthcare service quality in Indonesia. By understanding the impact of the online tiered referral system on patient satisfaction, JKN can continue to adapt and innovate to meet the community's needs for accessible and high-quality healthcare services.

Method

This study is a non-experimental, quantitative research with a cross-sectional and associative analysis approach. The research was conducted at Royal Prima Hospital Medan from February to March 2019, with the population including all BPJS Kesehatan patients undergoing inpatient and outpatient treatment, totaling an average of 6,653 patients. The sample was determined using interpretation estimation with the Structural Equation Modelling (SEM) approach. According to Hair et al. (2017), a sample size of 100-200 respondents is ideal for SEM, as a substantial sample may complicate model suitability. Data collection was done through an online-based questionnaire (Google Forms), following the guidelines of Permenpan RB No. 14 of 2017 concerning the preparation of community satisfaction surveys for public service units. The variables were measured using the Likert scale, allowing respondents to rate the provided statements on different levels. Reliability testing uses the Cronbach's Alpha test, where a value greater than 0.70 is considered reliable. Data analysis included univariate, bivariate (Chi-Square test), and multivariate (multiple logistic regression) analyses, with a Confidence Interval (CI) of 95%.

Results and Discussion

The respondents in this study were all BPJS Kesehatan patients at Royal Prima Hospital, both outpatient and inpatient, with the criteria of good communication and writing skills and a willingness to participate voluntarily and cooperatively. A total of 100 questionnaires were distributed to selected respondents. Respondents were divided based on four main characteristics, namely age, gender, education, and employment status. This characteristic division aims to identify demographic factors that may affect patient satisfaction with the BPJS Kesehatan online tiered referral system at Royal Prima Hospital.

Based on Table 1, the description of the research respondents in terms of age shows that the age group >50 years dominates with 54 respondents (54%), followed by the age group of 30-40 years and 41-50 years, which each consists of 18 respondents (18%). Meanwhile, respondents aged <30 are the smallest group, with ten people (10%). Regarding gender, most respondents were men, 65 people (65%), while women amounted to 35 people (35%). The dominance of male respondents can illustrate the tendency of this gender group to utilize BPJS Kesehatan services at Royal Prima Hospital. In terms of education, most of the respondents had higher education (S1 or more), which was 59 people (59%). Respondents with a high school education are 23 (23%), while those with a junior high school education are recorded as many as 18 (18%). It reflects that most patients who use BPJS Kesehatan services at Royal Prima Hospital have a relatively high educational background. Regarding employment status, the majority of respondents were self-employed, as many as 46 people (46%). Respondents who work in the private sector amounted to 29 people (29%), while civil servants were recorded as many as 25 people (25%). From this data, it can be seen that most of the respondents who are older, male, highly educated, and working as entrepreneurs dominate this study. This demographic can provide insight into the patients who use BPJS Kesehatan services more at Royal Prima Hospital.

Table 1. Overview of Research Respondents by Age, Gender, Education, and Employment Status

Characteristics	Category	Sum	Percentage
Age	<30 Years	10	10 (%)
	30 s/d 40 Years	18	18 (%)
	41 s/d 50 Years	18	18 (%)
	>50 Years	54	54 (%)
Sum		**100**	**100 (%)**
Gender	Male	65	65 (%)

Characteristics	Category	Sum	Percentage
	Female	35	35 (%)
Sum		**100**	**100 (%)**
Education	Junior high school	18	18 (%)
	Senior high school	23	23 (%)
	Higher Education	59	59 (%)
Sum		**100**	**100 (%)**
Employment Status	Civil servants	25	25 (%)
	Private employee	29	29 (%)
	Self-employed	46	46 (%)
Sum		**100**	**100 (%)**

Source: Primary data, processed in 2024.

Based on the Chi-Square test results in Table 2, of those who felt the requirements were easy, 35 were satisfied, while 26 respondents were dissatisfied, with a p-value of 0.010. This indicates a significant relationship between ease of requirements and patient satisfaction. On the procedure variable, out of 62 respondents who felt the service procedure was suitable, 47 respondents were satisfied, with a p-value of 0.017. It indicates that the quality of service procedures has significantly influenced service time and satisfaction. Of 77 respondents who felt the service was fast, 57 were satisfied, with a p-value of 0.006. It confirms that speed of service is very influential on patient satisfaction. On the cost/tariff variable, 41 respondents were satisfied with the efficient tariff, with a p-value of 0.001, indicating that cost efficiency strongly influences patient satisfaction. The facilities/infrastructure variable showed a significant relationship with satisfaction, with a p-value of 0.020. However, product specifications, executor competence, executor behavior, and complaint handling did not show an important relationship with patient satisfaction, with p-values of 0.268, 0.200, 0.103, and 0.074, respectively. Therefore, these variables were not used in the multivariate analysis.

Table 2. Chi-Square Test Results

Variable		Satisfaction		Sum	*p-value*
		Not Satisfied	Satisfied		
Requirements	Easy	26	35	61	**0.010**
	Not Easy	7	32	39	
Procedure	Not good	18	20	38	**0.017**
	Good	15	47	62	
Service Time	Not Fast	13	10	23	**0.006**
	Fast	20	57	77	
Fees/Rates	Efficient	25	26	51	**0.001**
	Inefficient	8	41	49	
Product Specifications	Easy	31	58	89	0.268
	Not Easy	2	9	11	
Implementer Competency	Skilled	31	57	88	0.200
	Unskilled	2	10	12	
Executor Behavior	Friendly	32	58	90	0.103
	Unfriendly	1	9	10	
Complaint Handling	Running	32	57	89	0.074
	Not Running	1	10	11	
Facilities/ Infrastructure	Inadequate	13	12	25	**0.020**
	Adequate	20	55	75	

Source: Primary data processed, 2024.

In the multivariate analysis shown in Table 3, the variable with the highest Odds Ratio (OR) is cost with an OR value of 7.516. It indicates that patients who feel service costs are more efficient have a 7.516 times greater chance of being satisfied than patients who think they are inefficient. This value indicates a significant effect of cost on patient satisfaction.

Table 3. Multivariate Analysis

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Requirements	-0.195	0.847	0.053	1	0.821	0.823	0.151	4.473
Procedure	1.001	0.527	3.605	1	0.059	2.722	0.961	7.708
Service Time	1.111	0.565	3.869	1	0.049	3.037	1.003	9.194
Fees/Rates	2.017	0.850	5.635	1	0.017	7.516	1.438	39.292
Facilities/ Infrastructure	1.016	0.573	3.133	1	0.075	2.762	0.903	8.454

Source: Primary data processed, 2024

Discussion

The Chi-Square test results showed that the requirements variable significantly influenced patient satisfaction, with a p-value of 0.010. It indicates that the ease of fulfilling administrative requirements is crucial in shaping patient perceptions. These requirements may include document completeness, clarity of procedures, and quick access to health services. Patients who find administrative processes simple tend to feel more valued, positively affecting their satisfaction. On the other hand, complicated procedures or long processing times can lead to frustration and dissatisfaction.[9]

These findings align with Roziqin (2023), who found a significant relationship between the health service process (p = 0.004) and system (p = 0.003) with patient satisfaction in BPJS outpatients at Advent Medan Hospital.[10] Similarly, Safitri (2023) concluded that requirements were significantly related to patient satisfaction (p = 0.001).[11] These results are consistent with Permenpan RB No. 14 of 2017, highlighting requirements as a critical dimension in public satisfaction surveys. Good health services should streamline administrative steps, reducing the burden on patients, especially in urgent conditions.[12] One way to enhance satisfaction is through better communication about procedures, helping patients feel prepared and less confused. Additionally, increased use of technology can simplify the requirements process and improve service efficiency.[13]

The Chi-Square test results showed that the procedural variable had a significant relationship with the level of patient satisfaction of BPJS users at Royal Prima Hospital, with a p-value of 0.017. It shows that the quality of service procedures influences patient satisfaction. The results of this study are supported by Hariani (2022), who stated that the analysis using chi-square obtained a p-value = 0.00 or a p-value of <0.05, meaning that there is a relationship between service procedures and patient satisfaction at Lahat Hospital in 2021.[14] Also supported by Safitri's (2023) research, with the results of the statistical test obtaining a value of p (sig) = 0.004 less than 0.05, H0 was rejected so that the conclusion was that there was a relationship between the system/mechanism/procedure and patient satisfaction.[11] Service procedures include the administrative flow, admission process, and steps patients must undergo to get health services. Patients who feel that their service procedures are accessible, transparent, and efficient tend to feel more satisfied. Conversely, complicated, convoluted, or time-consuming procedures can lead to frustration, ultimately lowering satisfaction levels.[15]

The Chi-Square test results showed that the service time variable had a significant relationship with patient satisfaction of BPJS users at Royal Prima Hospital, with a p-value of 0.006. It indicates that the speed of service time patients receive significantly affects their satisfaction. The results of this study are supported by Roziqin (2023), who stated that there is a relationship between the variable of waiting time for health services (p = 0.034 or p-value < 0.05) with online referral patient satisfaction in BPJS outpatients at Medan

Adventist Hospital.[10] Also supported by Safitri's (2023) research, with the statistical test results obtaining a value of p (sig) = 0.001 less than 0.05, H0 was rejected. Hence, the conclusion was that there was a relationship between service time and patient satisfaction.[11]

Service time is a crucial factor in health services.[16] Patients appreciate prompt service, especially in emergencies or when experiencing discomfort.[17] When patients feel that wait times are minimal and they are served quickly, they tend to feel satisfied with the overall healthcare experience they receive. Conversely, long wait times can lead to frustration and dissatisfaction, even if other aspects of the service, such as the quality of medical care, are adequate.[18;19]

The Chi-Square test results on the cost/tariff variable showed a p-value of 0.001, indicating a significant relationship between the perception of service costs and the level of patient satisfaction of BPJS users at Royal Prima Hospital. The results of this study are supported by Hariani (2022), who stated that the results of the analysis using chi-square obtained a p-value = 0.005, or a p-value of <0.05, which means that there is a relationship between service costs/tariffs and patient satisfaction at Lahat Hospital in 2021.[14] Also supported by Safitri's (2023) research, with the results of the statistical test obtaining a value of p (sig) = 0.003 less than 0.05, H0 was rejected so that the conclusion was that there was a relationship between service time and patient satisfaction.[11]

Patients who feel that the cost or rate of the service is more efficient tend to have a higher level of satisfaction.[20] Cost efficiency plays a vital role in patients' perception of the health care quality they receive.[21] In the context of BPJS Kesehatan, where most of the costs are covered by the insurance system, the perception of affordability and transparency remains crucial for patients.[22] When patients feel that the cost aligns with the quality of service received, this increases their satisfaction. Conversely, costs considered inefficient or too high can reduce patient satisfaction, even though the services are of high quality. It demonstrates the importance of cost transparency and the hospital's efforts to ensure patients understand the applicable fee structure.[23]

The Chi-Square test results on the facility/infrastructure variable with a p-value of 0.020 showed a significant relationship between the quality of facilities/infrastructure and the level of patient satisfaction of BPJS users at Royal Prima Hospital. Hariani (2022) stated that the analysis using chi-square obtained a p-value = 0.000 or a value of p <0.05 means that there is a relationship between service costs/rates and patient satisfaction at Lahat Hospital in 2021.[14] Also supported by Safitri's (2023) research, with the results of the statistical test obtaining a value of p (sig) = 0.004 less than 0.05, H0 was rejected so that the conclusion was that there was a relationship between service time and patient satisfaction.[11]

These findings confirm that adequate facilities and infrastructure influence patient satisfaction.[24] When physical facilities and infrastructure, such as waiting rooms, treatment rooms, and medical equipment, are well provided, patients are more likely to feel comfortable and trust that they receive quality services.[25] This contributes directly to patient satisfaction levels. Conversely, inadequate facilities/infrastructure, such as limited facilities, uncomfortable environmental conditions, or inefficient equipment, can lead to dissatisfaction, even though other aspects of health care are doing well. In the context of BPJS health services, the quality of facilities and infrastructure can affect how patients feel about the value of the services they receive.[26]

However, product specifications, implementation competence, implementation behavior, and complaint handling did not significantly correlate with patient satisfaction, with p-values of 0.268, 0.200, 0.103, and 0.074, respectively. It suggests that these variables do not substantially affect patients' perceptions of service satisfaction. Although specification products have an essential role in health services, these results indicate that patients' perception of these specifications does not sufficiently determine their level of satisfaction. It can be caused by differences in patients' understanding of product specifications. Similarly, the competence and behavior of the implementer did not have a significant effect, which suggests that other factors, such as service time and cost, are more dominant in influencing patient satisfaction. Patients prioritize practical aspects, such as speed and cost, over skills or interactions with healthcare professionals.

sssssssss

Conclusion

Based on the results of the Chi-Square test and multivariate analysis, this study found that the variables of requirements, procedures, service time, cost efficiency, and facilities/infrastructure had a significant impact on patient satisfaction at Royal Prima Hospital, with cost efficiency showing the highest Odds Ratio (OR) of 7.516. Conversely, product specifications, staff competence, staff behavior, and complaint handling did not show a significant effect. Royal Prima Hospital is recommended to focus on optimizing costs, speeding up service times, improving procedures, and enhancing communication between patients and staff to increase patient satisfaction. Periodic monitoring and facility improvements are crucial to enhancing service quality and the hospital's reputation.

References

1. Maryuni S, Eka A, - P. Sosialisasi Program Jaminan Kesehatan Nasional (Jkn) Dalam Meningkatkan Partisipasi Kepesertaan Mandiri Bpjs Kesehatan Di Desa Sungai Belidak Kecamatan Sungai Kakap Kabupaten Kubu Raya. Spirit Publik J Adm Publik. 2019;14(1):1.
2. Azizah SN. Membangun Sistem Jaminan Kesehatan Nasional yang Berkualitas: Kajian Literatur untuk Mempelajari Tantangan dan Merumuskan Solusi. An-Najat J Ilmu Farm dan Kesehat [Internet]. 2024;2(4):45–60. Available from: https://doi.org/10.59841/an-najat.v2i3.1572
3. Ode Arli RS, Syamsu RF, Makmun A. Faktor Penyebab Tingginya Angka Rujukan Di Fasilitas Kesehatan Tingkat Pertama Pada Era Jkn: Literature Review. Prepotif J Kesehat Masy. 2023;7(3):16594–611.
4. Sembiring A, Sidi R. Efektifitas Dan Perlindungan Hukum Dalam Pelayanan Kesehatan Di Rumah Sakit Umum Terhadap Peserta Bpjs Kesehatan Studi Rumah Sakit Umum Sembiring Deli Tua. J Ners [Internet]. 2024;8(1):418–25. Available from: http://journal.universitaspahlawan.ac.id/index.php/ners/article/view/17937%0Ahttp://journal.universitaspahlawan.ac.id/index.php/ners/article/download/17937/17443
5. Nella R, Widiyarta A. Optimalisasi Kualitas Pelayanan Publik Pada Puskesmas Kebonsari Melalui Pelaksanaan PEKPPP Optimizing The Quality Of Public Services At The Kebonsari Puskesmas Through The Implementation Of PEKPPP. J Adm Publik. 2024;XX(1):128–51.
6. Siregar YBA. Analisis Survei Kepuasan Masyarakat Pada Badan Riset Dan Inovasi Daerah Kota Medan. J Kaji Komputasi Inov. 2024;15(3):1–14.
7. M. Dwi Setiawan, Dewi Agustina. Indeks Kepuasan Peserta BPJS Kesehatan Terhadap Pelayanan Fasilitas Kesehatan Di Desa Tanjung Rejo. G-Couns J Bimbing dan Konseling. 2023;7(03):429–40.
8. Ariyanto, Armono. Analisis Faktor Penyebab Time Overrun Proyek Pembangkit Listrik Dengan Pendekatan Partial Least Square Structural Equation Modeling Sekolah Interdisiplin Manajemen dan Teknologi Institut Teknologi Sepuluh Nopember (ITS) Surabaya Kampus ITS Jl Cokroaminoto. Rekayasa [Internet]. 2024;17(2):320–30. Available from: https://doi.org/10.21107/rekayasa.v17i2.26957
9. Bhati D, Deogade MS, Kanyal D. Improving Patient Outcomes Through Effective Hospital Administration: A Comprehensive Review. Cureus. 2023;15(10).
10. Roziqin A, Syamiyah N. Literature Review : Pengukuran Indeks Kepuasan Masyarakat Unit Pelayanan Publik Puskesmas Ahmad. J Joubahs. 2023;03(2):175–90.
11. Safitri D, Gurning FP. Analisis Indeks Kepuasan Pasien Terhadap Pelayanan Rawat Jalan Pada Peserta Bpjs Di Rsu X Kota Medan. J Internet]. 2023;4(September):3473–82. Available from: http://journal.universitaspahlawan.ac.id/index.php/jkt/article/view/18295%0Ahttp://journal.universitaspahlawan.ac.id/index.php/jkt/article/download/18295/14040
12. Esposito S, Rosafio C, Antodaro F, Argentiero A, Bassi M, Becherucci P, et al. Use of Telemedicine Healthcare Systems in Children and Adolescents with Chronic Diseases or Transition Stages of Life: Consensus Document of the Italian Society of Telemedicine (SIT), of the Italian Society of Preventive and Social Pediatrics (SIPPS), of the Italian Society of Pediatric Primary Care (SICuPP), of the Italian Federation of Pediatric Doctors (FIMP) and of the Syndicate of Family Pediatrician Doctors (SIMPeF). J Pers Med. 2023;13(2).
13. Kitsios F, Stefanakakis S, Kamariotou M, Dermentzoglou L. Digital Service Platform and Innovation

in Healthcare: Measuring Users' Satisfaction and Implications. Electron. 2023;12(3).
14. Hariani B, Wahyudi A, Rawalilah H. Analisis Kepuasan Pasien Terhadap Pelayanan Kesehatan di RSUD Lahat Tahun 2021. J Kesehat Saelmakers PERDANA. 2022;5(2):447–367.
15. Weraman P, Kurniawan W, Mahendika D, Handajani S, Umar E. Relationship Between Patient Satisfaction from Food Quality and Health Clinic Cleanliness. J Penelit Pendidik IPA. 2023;9(12):10740–9.
16. Alfira Rezky Fajriati Rahmad, Tawai A, Suhadi. Analisis Indeks Kepuasan Masyarakat Terhadap Pelayanan Publik Di Puskesmas Kemaraya Kecamatan Kendari Barat Kota Kendari. J Publicuho. 2023;6(2):671–82.
17. Chen L, Chen T, Lan T, Chen C, Pan J. The Contributions of Population Distribution, Healthcare Resourcing, and Transportation Infrastructure to Spatial Accessibility of Health Care. Inq (United States). 2023;60.
18. Wahid D, Romadani D. Analisis Indeks Kepuasan Masyarakat Dari Pelayanan Puskesmas Lubuk Landai Kabupaten Bungo. J Manaj Sains. 2021;1(1).
19. Amjad Mohammed Jawhari. Waiting time and patients' satisfaction in the Taif City, Saudi Arabia emergency department. Saudi J Heal Sci. 2023;3(1):49–54.
20. Sari ER, Siregar SA, Guspianto. Indeks Kepuasan Masyarakat Puskesmas Kota Jambi. J Kesmas Jambi. 2021;5(1):72–7.
21. Williamson SM, Prybutok V. Balancing Privacy and Progress: A Review of Privacy Challenges, Systemic Oversight, and Patient Perceptions in AI-driven Healthcare. Appl Sci. 2024;14(2).
22. Rahman MK, Zainol NR, Nawi NC, Patwary AK, Zulkifli WFW, Haque MM. Halal Healthcare Services: Patients' Satisfaction and Word of Mouth Lesson from Islamic-Friendly Hospitals. Sustain. 2023;15(2):1–17.
23. Rizqi SK. Analisis Indeks Kepuasan Masyarakat Pengguna Kartu Jaminan Kesehatan Nasional Terhadap Pelayanan Kesehatan Di Rsud Wamena. J Lapago Soc Ilmu Sos dan Ilmu Polit. 2023;3(16):84–94.
24. Ferreira DC, Vieira I, Pedro MI, Caldas P, Varela M. Patient Satisfaction with Healthcare Services and the Techniques Used for its Assessment: A Systematic Literature Review and a Bibliometric Analysis. Healthc. 2023;11(5).
25. Cezar-Vaz MR, Bonow CA, Vaz JC, Nery CHC, da Silva MRS, Galvão DM, et al. The Working Environment in Primary Healthcare Outpatient Facilities: Assessment of Physical Factors and Health Professionals' Perceptions of Working Environment Conditions. Int J Environ Res Public Health. 2024;21(7).
26. Li Y, Gong W, Kong X, Mueller O, Lu G. Factors associated with outpatient satisfaction in tertiary hospitals in China: A systematic review. Int J Environ Res Public Health. 2020;17(19):1–29.