

## Relation between Health Insurance Systems to User Satisfaction in Dental Health Service

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### Abstract

The new health insurance system has some weaknesses. Therefore, one must observe the user satisfaction with dental health services provided to users by JPKM (Sub-regional Community Health Insurance) and JKN (National Health Insurance) in Sawahlunto city. This study aimed to compare the JPKM and JKN systems regarding user satisfaction in dental health service. This was a cross-sectional study, and the participants received an expectation ServQual questionnaire and a perception ServQual questionnaire. All 182 respondents had experiences using JPKM and JKN or were current users in Sawahlunto city. Analysis: User satisfaction was identified by analyzing the gap between the perception and the expectation of sociodemographic status. A comparison test (Mann Whitney) was used to analyze the results. On the JKN assurance dimension, there were differences of satisfaction based on the age variable. Regarding the profession variable, the Government Employee/pension group had higher satisfaction than other professions. The reliability and assurance dimensions had a significant effect on total satisfaction, and JPKM users had higher satisfaction than JKN users

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### Introduction

Sawahlunto is a city in the West Sumatra Province, Indonesia and it is located 95 km from Padang city.<sup>1</sup> Community awareness regarding dental health was relatively low, as seen in the data from the Health Department of Sawahlunto city that revealed less than 50% of the citizens have received dental health care.<sup>2</sup> The economic condition in Sawahlunto city was also categorized as low.<sup>1</sup> To resolve the health and economic problem, in 2005, the Sawahlunto city government created a health insurance called JPKM (Jaminan Pemeliharaan Kesehatan Masyarakat/ Sub-regional Community Health Insurance). On January 1, 2014, a new health insurance system called JKN (Jaminan Kesehatan Nasional/ National Health Insurance) and managed by BPJS (Badan Penyelenggara Jaminan Sosial/ Social Security Administrator) was implemented in Sawahlunto city. The

Sawahlunto city's government policy stated that JPKM would be fully replaced with JKN in 2017.<sup>3</sup> However, this policy did not provide better service benefits to the community, as the services, facilities, and costs offered by JPKM were better than JKN. The cost for a JPKM user was Rp6,000/month for a class 3 health facility (JPKM and BPJS, 2016), whereas a JKN user paid Rp25,500/month for a class 3 health facility, Rp51,000/month for a class 2 health facility, and Rp80,000/month for a class 1 health facility. Thus, in terms of costs, JPKM was cheaper than JKN.

In terms of health services, JPKM and JKN had their own distinct benefits. JPKM provided dental treatments, such as teeth extraction, that were extremely helpful to the community because it covered not only normal extractions but also minor oral surgery. However, JKN did not provide all kinds of extraction treatment, and it also limited some clinical and pharmacy treatments.<sup>4</sup> The regulation of treatment procedures that had not been socialized to all health practitioners and communities made it difficult to fully understand the JKN concept. There were some health facilities that required additional costs from users. The procedures for inpatient care facilities were also considered long and complicated. However,

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JKN had some benefits, such as coordination with private clinics as first-level health care facilities,<sup>5</sup> whereas JKPM only provided health services in public health care facilities. JKN health care facilities were divided into three categories,<sup>5</sup> classes 1, 2, and 3, which aimed to help users receive their health treatments at the facilities they could afford. However, there were some troubles in the health care facilities. Users who were registered in classes 1 and 2 received treatments in class 3 facilities because there were not enough health care facilities. The present study aimed to compare user satisfaction with each insurance system, highlighting the systems' strengths and weaknesses.

### Materials and methods

The study was performed with a cross-sectional technique using purposive sampling methods (for the Sawahlunto community, which used JPKM and JKN). To determine the users who would be used as subjects, the study performed accidental/convenience sampling of JPKM and JKN users. The study took 100 subjects from Sawahlunto General Hospital (SGH) and 60 subjects from Sawahlunto Community Health Center (SCHC); this was due to SGS having more users than SCHC. The study was conducted on selected CHC that provided the health services and facilities included in the study's questionnaire.

The results were analyzed with a frequency distribution analysis of sociodemographic status (gender, age, and profession). A Mann Whitney comparison test was performed in the gender variable group to identify the user satisfaction gap. A Kruskal Wallis test was performed in the profession variable group to identify the user satisfaction gap. In the profession variable group, which had a statistically significant difference, a post hoc test was conducted. A Spearman correlation test was performed in the age variable group to identify the user satisfaction gap. The JPKM and JKN user gaps were analyzed from all dimensions. A gap with a positive sign (+) showed that users were satisfied, while a gap with a negative sign (-) showed that the users were not satisfied. The satisfaction levels of JPKM and JKN users were then compared with a Mann Whitney test.

### Results

The study was performed at SGH and SCHC. There were 182 total subjects, with 119 subjects from SGH and 63 subjects from SCHC. The subjects' sociodemographic statuses are represented in Table 1. Analysis of the gender variable group showed no statistically significant difference in total or in each dimension. Analysis of the profession variable group in Table 2 showed statistically significant differences in total gap, tangible gap, and empathy gap for JPKM and JKN users, as well as in the reliability gap for JKN users. Analysis of the age variable group showed a statistically significant difference in the assurance gap for JKN users.

Variable	n	(%)
Gender		
Male	74	40.7%
Female	108	59.3%
Age		
< 29 years old	54	29.7%
30 – 39 years old	38	20.9%
40 – 49 years old	46	25.3%
50 -59 years old	25	13.7%
60 – 69 years old	14	7.7%
> 70 years old	5	2.7%
Profession		
Government Employee/Pension	9	4.9%
Private employee	61	33.5%
Entrepreneur	25	13.7%
Farmer/Labor	14	7.7%
Not working/Housewife	73	40.1%

**Table 1.** Sociodemographic status of subject.

Variable	Total Gap	Tangible Gap	Reliability Gap	Responsiveness Gap	Assurance Gap	Empathy Gap
JKPM						
Gender <sup>M</sup>	0.666	0.833	0.334	0.65	0.48	0.636
Profession <sup>K</sup>	0.021*	0.004*	0.111	0.149	0.247	0.035*
Age <sup>S</sup>	0.614	0.682	0.52	0.733	0.089	0.877
JKN						
Gender <sup>M</sup>	0.563	0.508	0.291	0.282	0.672	0.183
Profession <sup>K</sup>	0.02*	0.004*	0.03*	0.251	0.496	0.011*
Age <sup>S</sup>	0.231	0.602	0.197	0.77	0.029* r=-0.162	0.919

**Table 2.** Correlation and comparison test on sociodemographic status. <sup>M</sup>= Mann Whitney Test; <sup>K</sup>= Kruskal Wallis Test; <sup>S</sup>= Spearman Test; \*statistically significant difference; r= coefficient correlation

After analysis with *post hoc* test in Table 3, there were statistically significant differences in the Government Employee/pension group compared with the other profession groups in JPKM and JKN; furthermore, the user satisfaction in the Government Employee/pension group was higher than in any other group. Regarding the assurance dimension of JKN, there were also statistically significant differences between the

farmer/labor group and other profession groups; the user satisfaction in the non-working group was also higher than in any other group. In both health insurance groups, user satisfaction had negative signs, indicating unsatisfied users.

JPKM	Dimension	Profession				
		Private Employee	Entrepreneur	Farmer/Labor	Not working/Housewife	
JPKM	Total Gap					
		PNS/ Pension Private Employee Entrepreneur	0.001*	0.019*	0.001*	0.001*
	Tangible Gap					
		PNS/ Pension Private Employee Entrepreneur		0.717	0.822	0.916
	Empathy Gap					
		PNS/ Pension Private Employee Entrepreneur			0.573	0.695
	JKN	Total Gap				
			PNS/ Pension Private Employee Entrepreneur			
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur	0.001*	0.003*	0.000*
		Empathy Gap				
			PNS/ Pension Private Employee Entrepreneur		0.775	0.191
JKN		Total Gap				
			PNS/ Pension Private Employee Entrepreneur			
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur			0.426
		Empathy Gap				
			PNS/ Pension Private Employee Entrepreneur	0.006*	0.008*	0.003*
	JKN	Total Gap				
			PNS/ Pension Private Employee Entrepreneur		0.971	0.468
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur			0.534
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur			
JKN		Total Gap				
			PNS/ Pension Private Employee Entrepreneur	0.001*	0.012*	0.000*
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur		0.64	0.483
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur			0.276
	JKN	Total Gap				
			PNS/ Pension Private Employee Entrepreneur			
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur	0.001*	0.004*	0.000*
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur		0.935	0.131
JKN		Total Gap				
			PNS/ Pension Private Employee Entrepreneur			0.206
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur			
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur	0.001*	0.006*	0.003*
	JKN	Total Gap				
			PNS/ Pension Private Employee Entrepreneur		0.858	0.956
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur			0.874
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur			
JKN		Total Gap				
			PNS/ Pension Private Employee Entrepreneur	0.002*	0.005*	0.001*
		Tangible Gap				
			PNS/ Pension Private Employee Entrepreneur		0.724	0.496
		Reliability Gap				
			PNS/ Pension Private Employee Entrepreneur			0.361
	Empathy Gap					
		PNS/ Pension Private Employee Entrepreneur				0.626

**Table 3.** Post-hoc test on profession group variable.

Based on the mean scores in Table 4 for the total gap and for each dimension, the gap from JPKM users was lower than JKN users, indicating the JKPM score almost reached a satisfied level. In Table 5, the distribution of satisfaction level was taken from each subject's gap, and if the score showed a (+), it was interpreted as satisfied, whereas (-) signs were interpreted as unsatisfied. The total satisfaction score for JPKM users was higher than for the JKN group. After analysis with a Mann Whitney test in Table 6, there was a statistically significant difference between JPKM and JKN users in the total gap, reliability gap, and assurance gap.

	JPKM		JKN	
	Mean (SD)	Median (range)	Mean (SD)	Median (range)
Tangible Gap	-0.794 (0.8)	-1	-0.859 (0.8)	-1
Reliability Gap	-0.709 (0.8)	-1	-1.069 (0.9)	-1
Responsiveness Gap	-0.698 (0.8)	-1	-0.797 (0.8)	-1
Assurance Gap	-0.595 (0.7)	-0.67	-0.879 (0.8)	-1
Empathy Gap	-0.555 (0.8)	-1	-0.736 (0.9)	-1
Total Gap	-0.684 (0.6)	-0.8	-0.888 (0.7)	-1

**Table 4.** Mean and median for gap score.

		Gap Total	Gap Tangible	Gap Reliability	Gap Responsiveness	Gap Assurance	Gap Empathy
		JPKM	Unsatisfied (81.9%)	149 (73.6%)	132 (72.5%)	107 (58.8%)	130 (71.4%)
JPKM	Satisfied (18.1%)	33 (26.4%)	48 (27.5%)	75 (41.2%)	52 (28.6%)	85 (46.7%)	
JKN	Unsatisfied (82.4%)	150 (74.2%)	135 (75.3%)	110 (60.4%)	138 (75.8%)	105 (57.7%)	
JKN	Satisfied (17.6%)	32 (25.8%)	47 (24.7%)	72 (39.6%)	44 (24.2%)	77 (42.3%)	

**Table 5.** Satisfaction distribution.

Group	Total Gap	Tangible Gap	Reliability Gap	Responsiveness Gap	Assurance Gap	Empathy Gap
JPKM	0.002*	0.461	0.000*	0.278	0.000*	0.077
JKN						

**Table 6.** Satisfaction comparison of JPKM and JKN users. \*statistically significant difference

## Discussion

The study was performed at SGH and SCHC. There were 182 total subjects, with 119 subjects from SGH and 63 subjects from SCHC; this was due to SGH having more users than SCHC. The study was performed on selected Puskesmas that provided the health services and facilities included in the study's questionnaire. To

evaluate user satisfaction, this study compared the gap between perception and expectation.<sup>6</sup> Perception and expectation scores were taken from the ServQual questionnaire, which consisted of three questions on the tangible dimension of facilities; two questions on the reliability dimension about the administration procedures and the inpatient procedures; one question on the responsiveness dimension about the response to solve problems; three questions on the assurance dimension about the assurance of medical references, services, and costs; and one question on the empathy dimension about the attitudes of JPKM and JKN employees.

Based on a Mann Whitney test, there was no statistically significant difference in the satisfaction gap of the gender variable group, when comparing the gender variable group to the total gap and to each health care dimension. The analysis used a p-value of  $> 0.05$ . These results were different than the results from the study conducted by Rafat Mohebifar *et al.* and Al-Borie *et al.*, which stated that gender had a significant relation to satisfaction.<sup>6-8</sup> A Spearman test was conducted to determine the relation between age and satisfaction. The results stated that only the assurance dimension of the JKN group had a significant relation with a negative correlation (-), which is interpreted as meaning the younger the user, the higher the level of satisfaction. These results were also different than the results from the study conducted by Rafat Mohebifar *et al.* and Al-Borie *et al.*, which stated that age has no significant relation to satisfaction.<sup>6-8</sup> A Kruskal Wallis test was conducted to determine the different satisfaction levels in the profession variable group. The results showed that JPKM and JKN users both had statistically significant differences in total gap, tangible gap, and empathy gap based on profession, and JKN users also displayed a significant difference in the reliability gap. A post hoc test was conducted to determine the differences in each group. The results stated that the Government Employee/pension group had the highest satisfaction level and a statistically significant difference than any other profession group among JPKM and JKN users. Furthermore, the non-working group had a higher satisfaction level than the farmer/labor group in the assurance dimension. The study conducted by Rafat Mohebifar *et al.* and Al-Borie *et al.* also stated that profession has a significant relation to

satisfaction: the higher level of education, the lower level of satisfaction.<sup>5-7</sup>

In this study, JPKM and JKN users both had negative gap scores on each dimension. The JPKM group has a smaller negative gap than JKN, as the gap between perception and expectation was extremely narrow, almost reaching user satisfaction. The study conducted by Al-Borie *et al.* also stated that national health care had a greater satisfaction gap than private health care in five Saudi Arabian cities (Tabuk *et al.*).<sup>7</sup> This smaller gap for JPKM system was due to the evaluation and improvement of the JPKM administration over 11 years.<sup>2,8</sup> Both JPKM and JKN had the lowest gap in the empathy dimension, followed by assurance, responsiveness, reliability, and tangible in JPKM, compared to responsiveness, tangible, assurance, and reliability in JKN. The study conducted by Al-Borie *et al.* also stated that in public health care, the dimensions that affect user satisfaction were tangible, empathy, assurance, reliability, and responsiveness, while in private health care, the dimensions that affect user satisfaction were assurance, empathy, tangible, reliability, and responsiveness.<sup>7</sup> However, other studies have stated that public health care had the biggest gap in the tangible dimension,<sup>9-11</sup> because public health care tends to focus on the empathy dimension due to limited facilities.<sup>12</sup> Private health care tends to focus on the tangible dimension (facilities) rather than personal relations.<sup>10,11,12</sup>

The tangible dimension was the biggest gap in JPKM, according to a study conducted in Romania by Purcărea *et al.* Therefore, there should be an improvement in terms of facilities using the latest technology to give better service and to increase user satisfaction.<sup>13</sup> In the JKN group, the reliability dimension, interpreted as administration procedure and inpatient procedure, was the biggest gap. BPJS, as the social security administrator, regulated that JKN users must sign up at the BPJS counter in hospitals to get an SEP (User Eligibility Document),<sup>3</sup> which contributed to longer and more complicated procedures. A measure was taken to resolve this problem by establishing online SEP registration; however, this was implemented in only some hospitals with good facilities.

This study had some limitations, such as the proportionality between females and males, the age proportion, and the unbalanced

profession group. A Cronbach  $\alpha$  analysis was conducted to test the questionnaire's reliability and showed an 0.85 internal consistency. When the question on Assurance 3 stated "Never paid additional cost to dental health treatment," the internal consistency increased to 0.853. This score showed good reliability.

### Conclusion

This study showed a relation between the JPKM and JKN insurance systems and user satisfaction, indicating the better the service, the higher the satisfaction. Regarding sociodemographic status, gender did not affect user perception of the health service. The age variable only affected the assurance dimension of the JKN group, showing that the younger the age, the higher the satisfaction. For the profession group, the Government Employee/pension group had a higher satisfaction level than the other professions in the JPKM and JKN groups, and the farmer/labor group had a lower satisfaction level than the non-working group. The reliability and assurance dimensions significantly affected user satisfaction in the JPKM and JKN groups, and the JPKM had more satisfactory results than the JKN group. There were some suggestions for future research, such as setting specific time and places to minimize the chance of bias when collecting data. If the study happened at different times and places, the analysis should be differentiated. The proportion of gender, age and profession should also be given more attention to minimize the chance of bias due to sociodemographic status.

### Declaration of Interest

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