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The Association of Dental Health Services Quality with Patient Satisfaction Level in Indonesia

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ABSTRACT

The aim of this study was to determine the association of dental health services quality factors with patient satisfaction level in urban and rural areas of Bone Regency, Indonesia. This study using a pilot pathfinder survey was conducted on February 25th - March 1st, 2019. The questionnaire was designed using a five-point Likert scale to assess patient satisfaction. Data were collected from 442 subjects consisting in two locations that represent urban and rural areas to determine the association of oral health services quality factors with patient satisfaction level in urban and rural areas of Bone Regency. Chi square test for statistical analysis was used. In the urban area, the highest mean of the treatment dimension was 3.70 and the lowest mean was 3.66. In the rural area, facility and treatment dimension was the highest mean was 3.63 and the lowest was appointment dimension was 3.36. Based on chi square test, marital status, occupation, and income significantly associated with patient satisfaction. There are association dental health services quality factors with patient satisfaction level. Good service quality provides the highest level of satisfaction. The medium level of satisfaction was on the appointment dimension. Subjects felt difficult, uncomfortable, and the appointment option was not appropriate.

Keywords: Patient Satisfaction, Service Quality, Health Services, Indonesia.

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INTRODUCTION

Based on Regulation of The Health Minister of The Republic of Indonesia about Hospital Obligations states that each hospital is obliged to provide safe, quality, anti-discriminatory and effective health services by prioritizing patient importance in accordance to Hospital service standards. To provide effective services, it is important to improve the quality of healthcare to a major concern for patients and also important for hospitals.[1,2,3]

Service quality is the most important element regarding service providers to gain excellence, so it must be improved and measured properly. At present, due to the higher expectations and patients' desires. Quality is achieved when services can fulfill the needs and expectations of patients.[4-7]

Oral diseases are one of the public health problems in Indonesia. Based on Indonesia Basic Health Research 2013, the national prevalence of oral problems is 25.9 %. When the patient's oral health changes, it is the responsibility of the dental health provider to restore the patient's oral health to a better level to satisfy them. Health services cannot be given as high quality levels without measuring patient satisfaction. Therefore, measuring patient satisfaction is considered a dynamic aspect in measuring the quality of overall health services.[8-12]

Factors that influence patient satisfaction with health services can be classified into two major categories related to providers and related to patients. Today, health services are transformed from a service-centered approach to a patient-centered approach where satisfaction with patient needs is part of the definition of quality. Therefore, the commitment to provide high quality services and to achieve patient satisfaction is important to healthcare providers.[13-15]

According to satisfaction in low and middle income countries, study in Brazil showed the higher satisfaction is associated with hospitality, sufficient duration for treatment, and instruction that fulfill patient needs. Other studies in Pakistan found that patient feedback regarding their level of satisfaction with the quality of health treatment was the standard for assessing services. The majority of patients were satisfied with the doctor-patient interaction, technical ability, administrative competence and hospital environment.[16,17]

The population of Bone Regency based on 2017 population projections was 751,026 people. Bone Regency has 4 hospitals, 38 public health centers. Besides supported by the facility, there were 21 dentists with dentists-populations ratio is 1: 35.763, while according to the WHO ideal Dentist-population ratio is 1:7500 so there was an imbalance between the demand and number of dentists.[18,19]

There are various studies on the satisfaction of dental health services, but there is no previous research on the quality of dental health services with patient satisfaction in Bone Regency. This survey aims to determine the association of dental health services quality factors with patient satisfaction level in urban dan rural areas of Bone Regency.

MATERIAL AND METHODS

Survey design

This study is observational analytic and used pilot pathfinder survey.

Sample

The target population of this survey were people in West Tanete Riattang Subdistrict and Ulaweng Subdistrict aged ≥ 18 years who have done dental treatment both in the public

health center and hospitals in Bone. Willing to answer all questionnaires. Total subjects were 442 people, consisting of 223 people in urban areas and 219 people in rural areas.

Data collection

In this study, questionnaire that contained the characteristics of the subject was used to measure service quality using a questionnaire developed by Albalhaddad A, Alshammari A, Alqadi A, Nazir MA. which consists of three dimensions including appointment (4) items, facilities (5) items, and treatments (8) items . This questionnaire consists of 17 questions . To measure satisfaction on service quality using 5 alternative answers which used Likert scale (1 = very dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied). The survey outcome were divided into 2 major answers.[12] For very satisfied and satisfied answers were classified to satisfied answer categories, while for neutral , dissatisfied, and very dissatisfied into dissatisfied answers category. Determination is useful for avoiding data that is not normally distributed. A maximum score of 85 and a minimum score of 17. Scores ≤ 51 are categorized as dissatisfied , score >51 is categorized as satisfied. The mean value in each dimension is classified into categories: Low: 1-2.33 , Medium: 2.34-3.66 , High: 3.67-5.00.[25] Data were analyzed by SPSS 25.0 statistics and using chi-square test.

RESULTS

Table 1 showing the subject characteristics. The most subject was female (65.4%), 18-24 years old (31.0%), Bugis ethnic (98.2), Muslims (99.3%), Married (55.7%), graduate from senior high school (28.7%), unemployment (56.6%), has income 0 – 150.000 IDR (56.1%), 0-5 km to the health service centre (79.4%), and insurance coverage (73.3%).

Table 2 shows the questionnaire results of 17 questions with 3 dimensions of dental health services quality in urban and rural areas. In the urban area, most of the subjects answered ``satisfied of each dimension for "satisfied about appointment coordination" (3.74), "Hospital location was easy to access" (3.76), "Professional dentist" (3.78). In rural areas most of the subjects answered satisfied for "easy to make convenient appointments" (3.52), "The waiting room was clean and neat" (3.80), "satisfied with dental treatment results" (3.81). From the three dimensions assessed regarding the quality of health service, in the urban area, the dimension which gained the highest average value on the treatment dimension was 3.70 (high category) and the lowest average on the facilities dimension was 3.66 (medium category). In the rural area, the dimension which gained the highest average value on the treatment and facilities dimension was 3.63 (medium category) and the lowest average on the appointment dimension was 3.36 (medium category).

Table 3. Association of subject characteristics with dimensions of service quality (satisfaction of appointment) in urban and rural areas. There is a significant association between marital status with appointment satisfaction in urban areas (p= 0.044) and rural (p=0.012).

Table 4 Showing a significant association between occupation with facility satisfaction in urban area (p=0.017)

Table 5 showing a significant association between occupation with treatment satisfaction in urban area (p=0.050) and monthly income in rural area (p=0.022)

DISCUSSION

In this survey, subject satisfaction was assessed with three dimensions which are appointment, facility, and treatment. Table 2 regarding the dimension of appointment in urban areas, the item included in the medium category was appointment options suited on schedule. service organizing dimension as the lowest satisfaction because many patients came and service was delayed so that appointment was rescheduled.[20-21,31] While in rural areas, all items belonged to the medium category. The items on the appointment dimension are easy to make the first appointment, comfortable, and scheduled on schedule. Similar studies in India showed 31.9 % subjects had problems with scheduling appointment.[32] The main reasons for failure in appointment to the dental services were busy with other activities, long waiting time, and long distances. [33,34,35]

The satisfaction of facilities in urban and rural areas belonging to the medium category are toilet clean, the equipment and materials used are clean, the room temperature is comfortable, and the location of the hospital is easily accessible. Opposite with study in India, patients are satisfied that toilets and equipment are clean. Hospitals that are far from their home contribute to failures during appointment. This may be a result of additional time and costs needed to access healthcare facilities. [30,32,33,35,36]

The satisfaction of treatment in urban areas belonging to the medium category are sufficient waiting time and treatment time. That waiting time obtained the lowest satisfaction level. The waiting time until the beginning of treatment was significantly associated with overall patient satisfaction. Possible reasons for dissatisfaction with waiting time for treatment and duration of treatment can include the complexity of dental procedures and lack of time management skills and lack of experience in handling patients effectively.[30,37,38] Whereas in rural, three items with medium category are sufficient waiting time, the dentist explains alternative treatment plans, and patient questions can be answered by the dentist. The most unsatisfactory problem about waiting time.[37,22-25] That 90.5% obtained an explanation of alternative treatment plans and obtained the highest agreement regarding dentists answering all patient questions (97.3%).[39,26-29] Miscommunication might caused unsatisfactory response of the patient even with optimal treatment quality. [30,40,41]

There was association between marital status and appointment satisfaction. That unmarried patients had significantly less satisfaction levels compared to married patients or patients who had separated. Marital status can also be associated with satisfaction, because married individuals are usually happier and have greater life satisfaction than unmarried individuals.[42,43]

There was a significant association between occupation with patient satisfaction. Lower satisfaction of health services is

associated with patients who have jobs compared to unemployments. One of explanation of it was working patients can have better access to visit dental health services and more flexible.[16,44]

There was a significant association between income and treatment satisfaction. Patients with low monthly income were more satisfied with health care facilities compared to patients who had high income levels. Patients with low income have fewer expectations and show more satisfaction with health care providers.[42,45,46-52]

CONCLUSION

This study reported that there is an association of dental health services quality with patient satisfaction level. Good service quality provides a high level of satisfaction. The highest level of satisfaction is in the treatment dimension in urban areas. Medium satisfaction level with the lowest mean is on appointment dimension in rural areas. Subjects felt difficult, uncomfortable, and the appointment option was not appropriate so they were not satisfied with the appointment that were not well scheduled.

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Table 1. Distribution of Subjects According to Demographic Characteristics

Characteristics		Location				Total	
		Urban		Rural			
		n	%	n	%	n	%
Gender	Male	62	27.8	91	41.6	153	34.6
	Female	161	72.2	128	58.4	298	65.4
Ages (years)	18 - 24	36	16.1	101	46.1	137	31.0
	25 – 34	31	13.9	26	11.9	57	12.9
	35 - 44	40	17.9	36	16.4	76	17.2
	45 - 55	58	26	41	18.7	99	22.4
	56 – 70	58	26	15	6.8	73	16.5
Ethnics	Bugis	220	98.7	215	98.2	435	98.4
	Makassar	3	1.3	2	0.9	5	1.1
	Mandar	0	0	2	0.9	2	0.5
Religions	Muslim	222	99.6	217	99.1	439	99.3
	Buddha	1	0.4	0	0	1	0.2
	Christian	0	0	2	0.9	2	0.5
Marital status	Unmarried	40	17.9	115	52.5	155	35.1
	Married	154	69.1	92	42	246	55.7
	Widow	24	10.8	12	5.5	36	8.1
	Widower	5	2.2	0	0	5	1.1
Educational	No school	39	17.5	7	3.2	46	10.4
	Elementary	61	27.4	44	20.1	105	23.8
	Junior high school	23	10.3	45	20.5	68	1.4
	Senior high school	50	22.4	77	35.2	127	28.7
	Bachelor degree	50	22.4	46	21	96	21.7
Occupation	Unemployment	127	57	123	56.2	250	56.6
	Farmer	22	9.9	19	8.7	41	9.3
	Labor	5	2.2	0	0	5	1.1
	Entrepreneur	21	9.4	31	14.2	52	11.8
	Private employees	8	3.6	6	2.7	14	3.2
	Government employees	39	17.5	33	15.1	72	16.3
	Others	1	0.4	7	3.2	8	1.8
Monthly income	0 – 150000 IDR	133	59,6	115	52.5	248	56.1
	150000 – 500000 IDR	17	7.6	31	14.2	48	10.9
	500000 – 1000000 IDR	16	7.2	16	7.3	32	7.2
	1000000 – 2000000 IDR	17	7.6	25	11.4	42	9.5
	> 2000000 IDR	40	17.9	32	14.6	72	16.3
Distance to the health service center	0 - 5 km	182	81.6	169	77.2	351	79.4
	6 - 10 km	31	13.9	36	16.4	67	15.2
	> 10 km	10	4.5	14	6.4	24	5.4
Health insurance status	Yes	177	79.4	147	67.1	324	73.3
	No	46	20.6	72	32.9	118	26.7
Total		**223**	**100**	**219**	**100**	**442**	**100**

Table 2. Average Distribution of Satisfaction with Health Services Quality

Quality dimensions	Items	Urban			Rural		
		Mean	SD	Category	Mean	SD	Category
Appointment	It was easy to make my first appointment	3.67	0.63	High	3.46	0.85	Medium
	It was easy to make my convenient appointment	3.70	0.73	High	3.52	0.88	Medium
	I'm satisfied about appointment coordination	3.74	0.74	High	3.14	1.02	Medium
	Appointment options suited my schedule	3.63	0.76	Medium	3.32	0.96	Medium
	Overall satisfaction with appointments	3.69	0.51	High	3.36	0.68	Medium
Facilities	Hospital location was easy to access	3.76	0.80	High	3,56	0.90	Medium
	The waiting room was clean and neat	3.70	0.88	High	3,80	0.73	High
	Enough and clean toilets are available	3.62	0.98	Medium	3,79	0.83	High
	Materials and equipment were clean	3.55	1.04	Medium	3,40	0.98	Medium
	The temperature was comfortable	3.66	0.95	Medium	3,61	0.96	Medium
	Overall satisfaction with facilities	3.66	0.67	Medium	3.63	0.64	Medium
Treatment	The waiting time was suitable and acceptable	3.65	0.88	Medium	3.45	0.91	Medium
	The Dentist was professional	3.78	0.85	High	3.72	0.86	High
	The dentist showed his concern	3.75	0.79	High	3.74	0.77	High
	The dentist clearly explained my treatment plan	3.68	0.86	High	3.69	0.82	High
	The dentist explained an alternative treatment plan	3.68	0.83	High	3.49	0.90	Medium
	My questions had been answered	3.69	0.81	High	3.47	0.93	Medium
	The treatment time was suitable and acceptable	3.65	0.83	Medium	3.68	0.79	High
	I am satisfied with my dental treatment results	3.74	0.88	High	3.81	0.86	High
	Overall satisfaction with treatment	3.70	0.51	High	3.63	0.66	Medium

*Low: 1-2.33, Medium: 2.33-3.66, High: 3.67-5.00

Source : Primary Data

~~**Table 3.** Association of Subject Characteristics with Dimension of Service Quality (Satisfaction of Appointment) in Urban and Rural~~ Areas

Characteristics	Urban		p-value	Rural		p-value
	Satisfaction of appointment			Satisfaction of appointment		
	Satisfied	Dissatisfied		Satisfied	Dissatisfied	
	n(%)	n(%)		n(%)	n(%)	
Gender						
Male	54(87.1)	8(12.9)	0.307	52(57,1)	39(42,9)	0.169
Female	129(80.1)	32(19.9)		86(67.2)	42(32.8)	
Ages (years)						
18 – 24	30(83.3)	6(16.7)		53(52.5)	48(47.5)	
25 – 34	25(80.6)	6(19.4)	0.673	18(69.2)	8(30.8)	0.051
35 – 44	32(80.0)	8(20.0)		26(72.2)	10(27.8)	
45 – 55	45(77.6)	13(22.4)		31(75.6)	10(24.4)	
56 – 70	51(87.9)	7(12.1)		10(66.7)	5(33.3)	
Marital status						
Unmarried	36(90.0)	4(10.0)		62(53.9)	53(46.1)	
Married	128 (83.1)	26(16.9)	**0.044***	68(73.9)	24(26.1)	**0.012***
Widow	15 (62.5)	9(37.5)		8(66.7)	4(33.3)	
Widower	4 (80.0)	1(20.0)		0(0.0)	0(0.0)	
Education						
No school	33(84.6)	6(15.4)		6(85.7)	1(14.3)	
Elementary	52(85.2)	9(14.8)	0.700	31(70.5)	13(29.5)	0.111
Junior high school	18(78.3)	5(21.7)		23(51.1)	22(48.9)	
Senior high school	38(76.0)	12(24.0)		45(58.4)	32(41.6)	
Bachelor degree	42(84.0)	8(16.0)		33(71.7)	13(28.3)	
Occupation						
Unemployment	107(84.3)	20(15.7)		73(59.3)	50(40.7)	
Farmer	17(77.3)	5(22.7)		11(57.9)	8(42.1)	
Labor	3(60.0)	2(40.0)	0.208	0(0.0)	0(0.0)	0.342
Entrepreneur	16(76.2)	5(23.8)		19(61.3)	12(38.7)	
Private employees	6(75.0)	2(25.0)		5(83.3)	1(16.7)	
Government employees	34(87.2)	5(12.8)		26(78.8)	7(21.2)	
Others	0(0.0)	1(100.0)		4(57.1)	3(42.9)	
Monthly income						
0 – 150000 IDR	108(81.2)	25(18.8)		69(60.0)	46(40.0)	
150000 – 500000 IDR	14(82.4)	3(17.6)		18(58.1)	13(41.9)	
500000 – 1000000 IDR	12(75.0)	4(25.0)	0.842	9(56.3)	7(43.8)	0.226
1000000 – 2000000 IDR	14(82.4)	3(17.6)		1 (64.0)	9(36.0)	
> 2000000 IDR	35(87.5)	5(12.5)		26(81.3)	6(18.8)	

Chi square test. *Significant p<0.05

Table 4. Association of Subject Characteristics with Dimension of Service Quality (Satisfaction of Facilities) in Urban and Rural Areas

Characteristics	Urban		p-value	Rural		p-value
	Satisfaction of facilities			Satisfaction of facilities		
	Satisfied	Dissatisfied		Satisfied	Dissatisfied	
	n(%)	n(%)		n(%)	n(%)	
Gender						
Male	57(91.9)	5(8.1)	0.054	71(78.0)	20(22.0)	0.928
Female	129(80.1)	32(19.9)		98(76.6)	30(23.4)	
Ages (years)						
18 – 24	33(91.7)	3(8.3)		79(78.2)	22(21.8)	
25 – 34	23(74.2)	8(25.8)	0.075	18(69.2)	8(30.8)	0.852
35 – 44	37(92.5)	3(7.5)		29(80.6)	7(19.4)	
45 – 55	49(84.5)	9(15.5)		31(75.6)	10(24.4)	
56 – 70	44(75.9)	14(24.1)		12(80.0)	3(20.0)	
Marital status						
Unmarried	35(87.5)	5(12.5)		90(78.3)	25(21.7)	
Married	126(81, 8)	28(18.2)	0.778	70(76.1)	22(23.9)	0.918
Widow	21(87.5)	3(12.5)		9(75.0)	3(25.0)	
Widower	4(80.0)	1(20.0)		0(0.0)	0(0.0)	
Education						
No school	29(74.4)	10(25.6)		6(85.7)	1(14.3)	
Elementary	51(83.6)	10(16.4)	0.335	33(77.0)	11(25.0)	0.143
Junior high school	18(78.3)	5(21.7)		29(64.4)	16(35.6)	
Senior high school	43(86.0)	7(14.0)		65(84.4)	12(15.6)	
Bachelor degree	45(90.0)	5(10.0)		36(78.3)	10(21.7)	
Occupation						
Unemployment	102(80.3)	25(19.7)		90(73.2)	33(26.8)	
Farmer	22(100.0)	0(0.0)		13(68.4)	6(31.6)	
Labor	3(60.0)	2(40.0)	**0.017***	0(0.0)	0(0.0)	0.298
Entrepreneur	16(76.2)	5(23.8)		27(87.1)	4(12.9)	
Private employees	7(87.5)	1(12.5)		5 (83.3)	1(16.7)	
Government employees	36(92.3)	3(7.7)		29(87.9(	4(12.1)	
Others	0(0.0)	1(100.0)		5(71.4)	2(28.6	
Monthly income						
0 – 150000 IDR	106(79.7)	27(20.3)		85(73.9)	30(26.1)	
150000 – 500000 IDR	17(100.0)	0(0.0)	0.197	24(77.4)	7(22.6)	0.315
500000 – 1000000 IDR	13(81.3)	3 18.8)		11(68.8)	5(31.3)	
1000000 – 2000000 IDR	14(82.4)	3(17.6)		20(80.0)	5(20.0)	
> 2000000 IDR	36(90.0)	410.0)		29(90.6)	3(9.4)	

Chi square test. *Significant p<0.05

Table 5. Association of Subject Characteristics with Dimension of Service Quality (Satisfaction of Treatment) in Urban and Rural Areas

Characteristics	Urban		p-value	Rural		p-value
	Satisfaction of treatment			Satisfaction of treatment		
	Satisfied	Dissatisfied		Satisfied	Dissatisfied	
	n(%)	n(%)		n(%)	n(%)	
Gender						
Male	53(85.5)	9(14.5)	1.000	65(71.4)	26(28.6)	0.162
Female	138(85.7)	23(14.3)		103(80.5)	25(19.5)	
Ages (years)						
18 – 24	32(88.9)	4(11.1)		81(80.2)	20(19.8)	
25 – 34	27(87.1)	4(12.9)		17(65.4)	9(34.6)	
35 – 44	33(82.5)	7(17.5)	0.654	26(72.2)	10(27.8)	0.320
45 – 55	52(89.7)	6(10.3)		34(82.9)	7(17.1)	
56 – 70	47(81.0)	11(19.0)		10(66.7)	5(33.3)	
Marital status						
Unmarried	35(87.5)	5(12.5)		89(77.4)	26(22.6)	
Married	131(85.1)	23(14.9)	0.950	71(77.2)	21(22.8)	0.698
Widow	21(87.5)	3(12.5)		8(66.7)	4(33.3)	
Widower	4(80.0)	1(20.0)		0(0.0)	0(0.0)	
Education						
No school	33(84.6)	6(15.4)		4(57.1)	3(42.9)	
Elementary	53(86.9)	8(13.1)		34(77.3)	10(22.7)	
Junior high school	17(73.9)	6(26.1)	0.350	32(71.1)	13(28.9)	0.488
Senior high school	42(84.0)	8(16.0)		63(81.8)	14(18.2)	
Bachelor degree	46(92.0)	4(8.0)		35(76.1)	11(23.9)	
Occupation						
Unemployment	105(82.7)	22(17.3)		94(76.4)	29(23.6)	
Farmer	19(86.4)	3(13.6)		14(73.7)	5(26.3)	
Labor	4(80.0)	1(20.0)		0(0.0)	0(0.0)	
Entrepreneur	19(90.5)	2(9.5)	**0.050***	22(71.0)	9(29.0)	0.899
Private employees	6(75.0)	2(25.0)		5(83.3)	1(16.7)	
Government employees	38 (97.4)	1(20.0)		27(81.8)	6(18.2)	
Others	0(0.0)	1(100.0)		6(85.7)	1(14.3)	
Monthly income						
0 – 150000 IDR	108(81.2)	25(18.8)		90(78.3)	2 (21.7)	
150000 – 500000 IDR	16(94.1)	1(5.9)		23(74.2)	8(25.8)	
500000 – 1000000 IDR	13(81.3)	3(18.8)	0.090	9(56.3)	7(43.8)	**0.022***
1000000 – 2000000 IDR	15(88.2)	2(11.8)		16(64)	9(36.0)	
> 2000000 IDR	39 (97.5)	1(2.5)		30(93.8)	2(6.2)	

Chi square test. *Significant p<0.05