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Quality of Dental Health Service in Indonesia: A Pilot Pathfinder Survey

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ABSTRACT

The aim of this study was to identify factors affecting quality of dental health service in Pinrang District, Indonesia. This study used a pilot pathfinder design which was conducted on January 28th- February 1st, 2019 and analysed a sample of 298 subjects. Data were collected using a modified SERVQUAL questionnaire designed for the study based on a model of service quality which consists of two parts: the subject's demographic characteristics and a 65-item questionnaire to measure the five dimensions of the service quality. Five points Likert Scale were used to evaluate all dimensions in the questionnaire (1= Very Poor, 5=Excellent). The data were analyzed using SPSS 25.0 and Amos 18.0 to get the mean, standard deviation and confirmatory factor. The highest score regarding the service quality on the dimension of doctors with the average value was 3.73 and the lowest score on the dimension of registration and pharmacy with the same average value was 3.66. Based on Confirmatory Factor Analysis, all the results of the goodness of fit index are all classified in the poor category. Factors affecting quality in dental health service in Pinrang district in each dimension were "The staffs are quick to handle the patients" on registration dimension, "Accuracy of examination performed by a doctor" on doctors dimension, "Nurses are quick to handle patient complaints" on nurses dimension, "Peace in the health service centre's environment" on health service environment dimension.

Keywords: Health Care, Dentist, Survey, Questionnaire, Indonesia

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INTRODUCTION

Based on Indonesian Minister of Health Regulation in 2018 Number 4 Chapter II Article 2 Paragraph 1b concerning about Hospital Obligations states that each hospital is obliged to provide safe, quality, anti-discriminatory and health workers have to pay attention to the services provided.[1] An effective and efficient service quality improvement requires an understanding of specific dimensions of quality.[2,3]

Dental and oral health is an inseparable part of systemic health and as one of the main indicators in quality of life. Poor dental and oral health affect general health conditions and psychosocial and economic life. In addition, dental and oral health is an important indicator of the country's socioeconomic level development.[4,5,19,20]

The quality of dental health services is very important. Oral and dental disease is a major health problem as evidenced by the high incidence and prevalence throughout the world. The effects of oral and dental disease on individuals and communities are pain, dysfunction and reduced quality of life. Meanwhile, there are many communities, especially those with low socioeconomic conditions in developing countries which have oral and dental health problems. Geographical location, employment status, and socioeconomic status are three main variables influence individuals using dental health services.[5,6,21,22]

The society is generally more dependent on hospital facilities to overcome their dental and oral diseases. The provided facility is related to the quality of services delivered. The better hospital facilities given, the better the quality of services delivered. Patients' attitudes and expectations toward the quality of care have changed due to the increasing of public awareness toward dental and oral health.[7,8,24,25]

Interactions between patients and dentists provide opportunities to assess and to evaluate the quality of service and dentists can also evaluate the patients' perceptions. In the healthcare field, the quality of service is subjective both from the patients' side and the dentists' side. Although the quality of service is multidimensional, the quality of health services has two main dimensions, namely the technical dimension and the functional dimension. The technical dimension is defined on the basis of technical accuracy of the diagnoses and procedure and the information is generally accessible to the health care providers. The functional dimension refers to the manner of health care service delivered and becomes the primary determinant of patients' quality perception. [9,10,11,26]

The recent study by Ramirez in Chile indicated that the quality of service is related to dentists who demonstrate and develop communication strategies which build relationships with patients and as a result patients can feel comfortable with the treatment and the environment.[15] In addition, another study by Fuad and Tegar conducted in Kutai Kartanegara, Indonesia regarding the relationship of service quality and patient satisfaction found mostly subjects were satisfied with the quality of service from the assurance and empathy dimensions. Meanwhile, the responsiveness dimension has the lowest average of subjects .[10,12-14,27]

Pinrang district has 2 private hospitals and 1 state hospital with a ratio of 1: 10000 and 62 public health care with a ratio of 1: 20000. This indicated the number of health facilities is not yet optimal, supported by the availability of health workers. The number of dentists in Pinrang is 24 with a ratio of dentists and residents of 1: 14285, meanwhile the ideal category for the ratio of dentists and residents according to WHO is 1: 2000, thus

indicating a lack of dentists in remote areas which impacted in quality of health service delivered.[18]

There have been various studies on the quality of dental health services but, there has been no previous research on the quality of dental health services in Pinrang district. In this context, this study aimed to determine the factors affecting the quality of dental health services in urban and rural areas in Pinrang district, South Sulawesi, Indonesia.

MATERIAL AND METHODS

Study Design

This is a cross-sectional study and used pilot pathfinder design by estimating the size of the sample based on age category in the location representing urban and rural areas. The data was collected in Wattangsawitto and Mattirobulu subdistricts, Pinrang district, South Sulawesi, Indonesia on January 28th – February 1st 2019. The inclusion criteria are the patients who have received dental and or medical services from dental clinics in hospitals or public health centres in Pinrang district and are capable of filling the questionnaire. The exclusion criteria are the patients who did not return or did not complete the questionnaire. The collected subject is 298 from a purposive sampling method.

Data Collection

The data were collected using modified SERVQUAL based on previous model service quality.[10] The questionnaire consist of two parts : patient demographic characteristics (such as gender, location, education, occupation, insurance status, etc) and five dimensions of service (registration, doctor, nurse, pharmacy, and environment of health service center) with the total of 56 questions. Each question had 5 alternative answers which used Likert scale as follows : (Code 5 = excellent, 4 = very good, 3 = good, 2 = fair, and 1 = poor).[28] The average value on each dimensions were categorized in Low : 1-2.33, Medium : 2.34-3.66, High : 3.67-5.00.[40]

Data analysis

Data were analyzed using SPSS Statistics for Windows Software, version 25 (IBM Corp., Armonk, NY, USA) and Analysis of Moment Structure 18.0. Descriptive statistics were used to calculate the frequencies, mean, and standard deviation. CFA were used to analyze whether the collected data fit with the model and total sample. Factor analysis that is investigated in CFA is Root Mean Squared Error of Approximation (RMSEA), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Goodness of Fit Index (GFI), Adjusted of Fit Index (AGFI), the degree of freedom (Df) and $\chi 23$.

RESULT

Table 1 showing the subject characteristics. The most subject was female (25.2%), 18-24 years old (26.56%), graduated from elementary school (25.2%), unemployment (52.0%), living in urban or Pinrang district (61.1%).

Table 2 showing the questionnaire results of 56 items with 5 dimensions consist of factors affecting dental service quality in Pinrang district, from the patient's point of view. The most important thing of each dimensions were "Patients do not need a long time to register " (3.69) on registration, "Neatness, cleanliness, and uniformity of doctor's clothing" (3.80) on doctors, "The nurse maintains patient's confidentiality" (3.73) on nurses, "Neatness, cleanliness, and uniformity of clothes of pharmacy staffs" (3.71) on pharmacy and "Cleanliness of the health service center's environment" (3.74) on environment of health service center.

According to Table 3, the health services quality was assessed based on the dimension of registration, doctors, nurses, pharmacy, and the environment of the health service center. From the five dimensions assessed regarding the quality of health service, the dimension which gained the highest average value on the dimension of doctors was 3.73 and the dimension which gained the lowest average on the dimension of registration and pharmacy was 3.66. According to Table 4 and Figure 1 which showed a model of confirming factors in the quality of health service centers in Pinrang District. Based on the absolute Goodness of Fit index $\chi 2$ of 12428.08 which indicates less good. The value of significance probability is 0,000 while the standard value is ≥0.05 and indicates the value of the possibility of entering into the poor category. The GFI value on the model is 0.436 while the normal value is ≥0.90 so it belongs to the poor category. with degrees of freedom 8.40. The AGFI value on the model is 0.391 while the normal value is ≥0.90 so that the AGFI value in this survey belongs to the poor category. CFI showed the suitability of a good model when it approaches ≥0.90. The TLI value on the model is 0.747 while the normal value is ≥0.95 and this indicates TLI in the less good category. This survey method also shows the RMSEA value of 0.158 with a normal value of .080.08 which means the suitability of the model is not good. With all the results of the goodness of fit index which are all classified in poor categories, it is concluded that these criteria as a fit requirement of a model have not been reached and are declared to be less fit. The results of data which are less fit indicate that the theoretical model of the subject data has poor suitability and cannot be used as a predictor of the theoretical model. The results of this study indicate the dimensions of nurses (regression weights of 0.98), and the responsiveness dimension has the lowest effect (regression weight 0.89) on dental service quality in Pinrang district. Each item has no statistical relationship.

DISCUSSION

Based on the results of a survey conducted in Pinrang District, it was shown that patients who had more dental care in health facilities were patients in the 18-24-year age group and were generally female. This is in accordance with previous studies conducted in India, Pakistan and Bantaeng District stating that more female patients visit health facilities than male patients.[10,16,29,33,34]

In this study, the majority of subjects in urban locations were more likely to visit health care centers both in health centers and hospitals than subjects in rural areas. This is due to the health service center in rural locations unable to meet the expectations of the patients and also the lack of enthusiasm from the subjects in rural locations to take part in surveys conducted by researchers.[17,41,30,42,43]

The dimension of doctors has the highest average value. Good service from hospital staff including the number of doctors who are sufficient to provide services can affect

patients as much as 60% to be able to return to health care facilities. This indicates that the number of doctors can influence the patient's assessment of the quality of health care services.[23,36] Whereas the items that most influence the quality of care are the accuracy of the examinations performed by doctors. This result is in accordance with research conducted in Malaysia, which stated that the knowledge of doctors when conducting examinations and when conducting questions and answers with patients influences patients' trust when receiving care and evaluating patients for the quality of services provided.[2,32,44-46]

Based on table 3, the registration dimension and pharmaceutical dimension get the lowest average of the five dimensions of service quality. This is in line with research conducted in Malaysia and Bangladesh which states that one of the things that affect service quality from the registration dimension is waiting time. Patients sometimes depend on functional aspects such as administrative procedures when assessing the quality of services in the health service center.[30,35,32,39]

The quality of services provided influences expectations and reality if patients get services that exceed their expectations, patients will say quality services and will develop to be satisfied with these services. On the other hand, if the patient feels the service is not in accordance with his expectations, the service is deemed not to have a lead. Patients in general have expectations that pharmacists should be more friendly, more responsive to patient needs, provide medication to patients with fast time, clearer drug writing, a more comfortable and cleaner waiting room. The quality of services provided will certainly affect the feelings and satisfaction of patients.[37,38,40,47,48]

Accessible health services can produce developments in the use of health services by patients. Some actions need to be taken to improve the quality of services at health facilities. Health care staff including nurses, registration staff, and doctors must continue to be trained in order to fulfill the large number of patients' expectations. Desires and expectations of patients should be heard in order to ensure quality health services in both rural and urban areas. On the other hand, the environment in health care centers must also be cleaner and healthier. This can be used by the relevant health agencies to develop a program in order to increase quality services.[39,49-45]

CONCLUSION

Factors affecting quality in dental health service in Pinrang district in each dimension were "The staffs are quick to handle the patients" on registration dimension, "Accuracy of examination performed by a doctor" on doctors dimension, "Nurses are quick to handle patient complaints" on nurses dimension, "Peace in the health service center's environment" on health service environment dimension.

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Table 1. Distribution of Subjects According To The Demographic Characteristics

Variables	n	%
Gender		

Male	74	24.8
Female	224	75.2
Age		
18-24 years	79	26.5
25-34 years	31	10.4
35-44 years	66	22.1
45-55 years	62	20.8
>56 years	60	20.1
Educational Status		
Uneducated	48	16.1
Graduated from elementary school	75	25.2
Graduated from junior high school	49	16.4
Graduated from high school	72	24.2
Bachelor's degree	45	15.1
Master's degree	8	2.7
Doctoral degree	1	0.3
Occupational Status		
Unemployment	155	52.0
Farmer	30	10.1
Labor	6	2.0
Enterpreneur	39	13.1
Government Employees	17	5.7
Private Employees	32	10.7
Others	19	6.4
Location		
Urban	184	61.7
Rural	114	38.3

Table 2. Factors Affecting Health Center Service Quality in Pinrang District

Quality Dimensions	Items	Mean	SD	Category
Registration	The facility provided in registration	3.68	0.92	High
	The number of staffs providing the services	3.68	0.94	High
	The easy accessibility to the health center	3.66	0.91	Medium
	Neatness, cleanliness, and uniformity of staffs' clothing	3.60	0.98	Medium
	The cleanliness of registration	3.68	0.99	High
	Patients do not need a long time to register	3.65	0.99	Medium
	A fair service regardless of social status	3.69	1.03	High
	The staffs' information can be trusted	3.67	0.97	High
	The staff carries out the task appropriately	3.65	0.97	Medium
	The staffs are empathy to the patients	3.65	0.95	Medium
	The staffs are quick to handle the patients	3.63	0.95	Medium
	Service schedule is on time	3.65	0.95	Medium
Doctors	Number of doctors who provide the services	3.62	1.08	Medium
	Neatness, cleanliness, and uniformity of doctor's clothing	3.80	0.96	High
	Doctors arrived on time	3.74	0.96	High
	Accuracy of examination performed by a doctor	3.74	0.92	High
	The correct explanation about the drugs' usage	3.73	0.92	High
	Doctor's responsiveness to the patient's complaints	3.74	0.89	High
	Doctor gives a chance to patient to ask	3.72	0.92	High
	Doctor tries to calm the patient's fear	3.74	0.89	High
	Doctor's attitude gives a sense of security	3.74	0.90	High
	Doctor serve the patient's family well	3.78	0.89	High
	Doctor explains the answers of patient's question	3.77	0.88	High
	Doctor keeps the patient's confidentiality	3.76	0.86	High
Nurses	Neatness, cleanliness and uniformity of nurse's clothes	3.70	0.86	High
	Number of nurses who provide services	3.71	0.83	High
	The nurse arrived on time	3.70	0.83	High
	Skilled nurses use medical equipment	3.71	0.90	High
	Nurses are quick to handle patient complaints	3.70	0.88	High
	The nurse provides careful service	3.70	0.88	High
	The nurse acts immediately when needed	3.71	0.83	High
	Nurses spend time communicating with patients	3.77	1.40	High
	Nurses provide friendly service	3.70	0.83	High
	The nurse's attitude gives a sense of security	3.72	0.84	High
	The nurse maintains patient's confidentiality	3.73	0.86	High
Pharmacy	Neatness, cleanliness, and uniformity of clothes of pharmacy staffs	3.71	0.85	High
	Number of pharmacy staffs who provide services	3.69	0.81	High
	The medicine needed is in the hospital	3.68	0.82	High
	The medicine is neatly arranged	3.71	0.79	High
	Comfort of waiting place for medicine	3.66	0.85	Medium
	Cleanliness of the pharmacy room	3.65	0.88	Medium
	Clarity of writing on the medicine card	3.62	0.84	Medium
	The pharmacy staff clearly conveys how to use the drug	3.67	0.86	High
	The time for taking the drug is not too long	3.59	0.93	Medium
	The pharmacy staff provide friendly service	3.64	0.87	Medium
	Supply of medication needed by the patient	3.71	0.79	High

Environment of health service centre	Cleanliness of the health service center's environment	3.74	0.82	High
	Waste disposal site in the health service center's environment	3.72	0.85	High
	The beauty of the park around the health service center	3.72	0.84	High
	Air comfort in the health service center's environment	3.64	0.83	Medium
	Peace in the health service center's environment	3.68	0.86	High
	Large health service center's area	3.66	0.85	Medium
	Health service center's fence	3.69	0.82	High
	The condition of the trash can	3.70	0.81	High
	Odorless	3.61	0.86	Medium

Table 3. The Distribution of Subjects Answer Based on Health Services Dimensions

Quality of Health Services	Mean	Standard Deviation	Category
1. Registration	3.66	0.91	Medium
2. Doctors	3.73	0.87	High
3. Nurses	3.71	0.82	High
4. Pharmacy	3.66	0.80	Medium
5. Environment of Health Service Center	3.68	0.79	High

Table 4. Confirmatory Factor Analysis Model on Quality in Health Service Centers in Pinrang District

Goodness of Fit Index	**Normal Values**	**Model Values**	**Category**
$\chi 2$	$\alpha = 0.05$	12428.088	Poor
Significance probability	≥0.05	0.000	Poor
Df	≤3	8.403	Poor
GFI	≥0.90	0.436	Poor
AGFI	≥0.90	0.391	Poor
CFI	≥0.90	0.734	Poor
TLI	≥0.95	0.747	Poor
RMSEA	≤0.08	0.158	Poor