

Factors Affecting Dental Center Service Quality in Indonesia

Fuad Husain Akbar¹, Syahrir Pasinringi², Abd Hair Awang³

¹Department of Dental Public Health, Faculty of Dentistry, Hasanuddin University and Hospital Administration Management, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia.  0000-0003-4819-4820

²Hospital Administration Management, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia.

 0000-0001-5947-2596

³Faculty of Social Sciences and Humanities, National University of Malaysia, Selangor, Malaysia.  0000-0002-0837-7975

Author to whom correspondence should be addressed: Fuad Husain Akbar, Department Dental Public Health, Faculty of Dentistry, Hasanuddin University, Indonesia. 90245. Phone: +62 81243422362. E-mail: fuadgi2@gmail.com.

Academic Editors: Alessandro Leite Cavalcanti and Wilton Wilney Nascimento Padilha

Received: 09 September 2018 / Accepted: 06 February 2019 / Published: 21 February 2019

Abstract

Objective: To identify factors affecting dental center service quality in Bantaeng Regency, Indonesia. **Material and Methods:** This study used a pilot pathfinder design and analysed a sample of 114 subjects. Data were collected using a questionnaire designed for the study based on model of service quality which consists of two parts: the subject's demographic characteristics and a 30 item questionnaire to measure the five dimensions of the service quality, include tangibility (7 question), reliability (9 question), responsiveness (6 question), assurance (4 question) and empathy (4 question). Five points Likert Scale were used to evaluate all dimension in questionnaire (1= strongly disagree, 5=strongly agree). The data were analyzed using SPSS 24.0 and Amos 18.0 to get the mean, standard deviation and confirmatory factor. **Results:** The most important thing of each dimensions were “the clinic employees should be clean, neat, tidy and appropriate to their professions”(4.08) on tangibility, “The dentist should give patients useful and necessary advice for preventing them from other diseases” (4.12) on reliability, “A secretary should always be accountable for arranging the time of treatment session by phone or in person” (4.06) on responsiveness, “In a good dental clinic, the employees should always behave towards patients with respect and courtesy and ensure their privacy” (4.11) on assurance and “The clinic employees should pay particular attention to each patient’s costs of dental services and should be assured that they are affordable for patients” (4.22) on empathy. Results showed that tangibility, reliability, and assurance have the highest effect on dental service quality in Bantaeng District. Meanwhile, the responsiveness dimensions have the lowest effects. **Conclusion:** Assurance, reliability, tangibility/physical condition are the factors affecting dental service quality in Bantaeng Regency.

Keywords: Health Services; Dental Health Services; Quality of Health Care.

Introduction

Quality is a measure of the extent to which services are delivered according to customer expectations. It is known that higher service quality results in improved customer satisfaction [1]. Since the ninety's century, the service sector has taken more action to improve the performance and effectiveness of services in order to achieve differentiation in the market which is also followed by awareness of quality improvement due to globalization and liberalization [1]. Meanwhile In the last three decades, there has been an increase in the international interest in the quality of health services due to changing standards of life and the demand for better medical care for the improvement of lifestyle [2].

Quality improvement acts strategically to achieve competitive advantage in an industry, improving the reputation and profitability of a healthcare organization [3]. Improving the quality of healthcare services has been the primary concern of patients, and in order to provide better service to patients, quality of service is becoming increasingly important for hospitals related to patient satisfaction and loyalty [2]. Patient satisfaction is considered an important outcome of care and is one of the major factors contributing to patient adherence to ongoing care and improving clinical outcomes [3].

All hospitals need to measure, monitor, and improve the quality of health services in order to survive and achieve patient satisfaction. In addition, the provision of high quality services is essential to achieving the Millennium Development Goals [3]. Indonesia, Based on Law Number 36 Year 2009, Article 5, declare that "Everyone has the right to obtain safe, quality and affordable health services" [2]. It also underlies the need for a standard for the quality of health care, which is then mentioned on article 55 paragraph [1] which must be determined by the government. [4]. In setting health care standards specifically in hospitals, health managers need a thorough understanding of how to improve the quality of care practically. In this case, hospital managers can place a major emphasis on attracting as many patients as possible and making patients loyal by knowing their expectations and trying to meet those expectations in an effective way measure the quality of healthcare in a competitive environment. The production of health services has several aspects: for example, in terms of service quality assessment, one of the most common ways in health care is to use consumer perceptions about the services provided [3].

Bantaeng and Pajukukang District are the two of eight districts in Bantaeng Regency, South Sulawesi Province, Indonesia. This regency has one Hospital and 13 Public Health Centre, which consist of 16 dentists that spread in each district. Bantaeng District has one Hospital, 2 Public Health Centre and consists of 4 dentists. Meanwhile in Pajukukang District has 3 Public Health Centre and consist of 3 dentists. From this data it is found that although most dentists are located in Bantaeng and Pajukukang district, there is a gap between the number of service providers in this case the dentist and the health center of the population in one area, which is determined by World Health Organization (WHO) that the ideal ratio of dentists in a population is 1: 2000, meanwhile the

data from Health Profile of Bantaeng Regency showed the ratio dentist in population is 1:87.248 population [5-7].

Therefore, based on the description of the above background it is necessary to conduct research on the factors that affect the quality of dental clinic services in Bantaeng Regency.

Material and Methods

Study Design

The study population of this research is the patient that already receive the dental services. This study used pilot pathfinder design, In Bantaeng and Pajukukang District, Bantaeng Regency, Indonesia in January 2018. Inclusion criteria are the patient that already receive the dental services from dental clinics in hospital or Public Health Centre in Bantaeng Regency and capable to feel the questionnaire. The Excluded criteria are the patients that didn't collect and complete the questionnaire. The collected subject is 114 from purposive sampling method.

Collecting Data

The data were collected using dependable questionnaire, that design based on this study, based on previous model service quality [8]. The questionnaire consist of two part, which is part one is patient demographics such as gender, location, education, occupation, and insurance status and part two is a questionnaire 30 items to determined five dimensions of service quality, include tangibility (7 question), reliability (9 question), responsiveness (6 question), assurance (4 question) and empathy (4 question). Five points Likert Scale were used to evaluate all dimension in questionnaire (1= strongly disagree, 5=strongly agree). The questionnaire was modified and validated with reliability were measured by Cronbach α coefficient 0.95 then the questionnaire being translated into the Indonesian language then data collected in English [9].

Data Analysis

Data were analyzed using IBM SPSS Statistics for Windows Software, version 24 (IBM Corp., Armonk, NY, USA) and Amos 18.0. Descriptive statistics were used to calculate the absolute and relative 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) dan χ^2

Ethical Aspects

Permission was obtained from Faculty of Dentistry, Ethics and Research Advisory Committee, Hasanuddin University. Informed consent was obtained from all the subjects.

Results

Table 1 showing the subject characteristics. The most subject was female (72.8%), 18-40 years old (74.6%), graduate from junior high school (37.7%), work as a student (43.0%), living in urban or Bantaeng District (77.2%) and insurance coverage (91.2%).

Table 1. Distribution of participants according to demographic characteristics.

Variables	N	%
Gender		
Male	31	27.2
Female	83	72.8
Age		
18-40 Years	85	74.6
41-60 Years	24	21.1
>60 Years	5	4.4
Education		
Uneducated	2	1.8
Graduated From Elementary School	13	11.4
Didn't Graduated From Elementary School	-	-
Graduated From Junior High School	43	37.7
Didn't Graduated From Junior High School	1	0.9
Graduated From Senior High School	34	29.8
Didn't Graduated From Senior High School	2	1.8
Diploma	6	5.3
Bachelor	13	11.4
Occupation		
Student	49	43.0
Government Employees/Police/Pensioners	18	15.8
Private Employees	7	6.1
Entrepreneur	21	18.4
Housewife	14	12.3
Others	5	4.4
Location		
Urban	88	77.2
Rural	26	22.8
Insurance Coverage		
Yes	104	91.2
No	10	8.8

Table 2 showing the questionnaire results of 30 question items with 5 dimensions consist of factors affecting dental service quality in Bantaeng Regency, from the patient's point of view. The Cronbach α coefficient for each dimension of the question is higher than 0.6, which means its reliability level is reliable. The highest Cronbach α coefficient is in the tangibility dimension of 0.83 and the lowest is in the reliability/reliability dimension of 0.622. The most important thing of each dimensions were “the clinic employees should be clean, neat, tidy and appropriate to their professions” (4.08) on tangibility, “The dentist should give patients useful and necessary advice for preventing them from other diseases” (4.12) on reliability, “A secretary should always be accountable for arranging the time of treatment session by phone or in person” (4.06) on responsiveness, “In a good dental clinic, the employees should always behave towards patients with respect and courtesy

and ensure their privacy” (4.11) on assurance and “The clinic employees should pay particular attention to each patient’s costs of dental services and should be assured that they are affordable for patients“ (4.22) on empathy.

Table 2. Factors affecting dental center service quality in Bantaeng Regency.

	Quality Dimensions and Items	Mean	SD
Tangibility ($\alpha = 0.830$)	P1. In a good dental clinic, the equipment should be modern	3.76	0.71
	P2. The clinic employees should be clean, neat, tidy and appropriate to their professions	4.08	0.73
	P3. The waiting room, tables and chairs, bathrooms, toilets and floors should be clean, beautiful, comfortable and desirable	3.89	1.05
	P4. The card of patients’ chart numbers, pamphlets and brochures should be appropriate and beautiful	4.00	0.92
	P5. The cleanliness and quality of the materials and supplies used for treatment should be appropriate	3.96	0.99
	P6. The process of paying the bills should be easy and comfortable	4.01	0.99
	P7. The car parking space for patients should be enough around the clinic	3.97	1.03
Reliability ($\alpha = 0.622$)	P8. In a good dental clinic, the patients’ physical examinations and treatments should be provided at the time that has previously been appointed and patients should not be delayed too much on the day of physical examination and treatment	3.84	1.21
	P9. The dentist should consider the patients’ expectations and needs and meet them completely	4.07	0.98
	P10. When explaining the treatment procedures to the patients, the dentist should speak clear and understandable so that they fully understand him/her	3.92	1.15
	P11. In addition to the assistants and secretary, the dentist should also, explain the treatment procedures to the patients	4.01	0.73
	P12. The patients’ charts should be completed without any mistakes and maintained accurately and can easily be found when needed	3.32	1.26
	P13. The dental care costs should not be high	3.82	1.11
	P14. Everything should be done correctly and without duplication and reworking at the first time	3.89	0.82
	P15. The treatment provided should be of high quality and long term Effectiveness	4.11	0.97
	P16. The dentist should give patients useful and necessary advice for preventing them from other diseases	4.12	1.08
Responsiveness ($\alpha = 0.656$)	P17. In a good dental clinic, there should not be a long time between patients’ physical examinations and their treatment procedures	3.90	0.83
	P18. The treatment process should be provided quickly and conveniently	4.04	0.82
	P19. The employees should behave towards patients such that they can trust in the dental clinic and its employees	3.98	0.84
	P20. A secretary should always be accountable for arranging the time of treatment session by phone or in person	4.06	0.97
	P21. The dentist should clearly explain the problems and diseases to the patients during the first visit and physical examination	3.75	1.15
	P22. The employees should constantly be willing to help the patients referred to the clinic and are ready at any time to answer their questions	3.97	0.72
Assurance ($\alpha = 0.793$)	P23. In a good dental clinic, the employees should always behave towards patients with respect and courtesy and ensure their privacy	4.11	0.85
	P24. The dentist should be familiar with the newest treatment methods, as well as the modern technologies	4.01	0.91
	P25. The dentist should have sufficient skills and be good at his/her job	3.76	1.03
	P26. A good dental clinic should have a good reputation among the people so that they offer it to each other	3.96	1.08
Empathy ($\alpha = 0.709$)	P27. In a good dental clinic, the admission process for consultation and initial physical examination should be carried out quickly and easily	3.83	0.79
	P28. The clinic employees should listen to the patients’ comments and opinions	4.04	0.89
	P29. The clinic employees should understand and pay attention to the patients’ needs	4.11	1.00
	P30. The clinic employees should pay particular attention to each patient’s costs of dental services and should be assured that they are affordable for patients	4.22	0.99

Figure 1 showing confirmatory factor model on service quality in the dental health center in Bantaeng Regency. Based on Goodness of Fit Index χ^2 absolut were 1470.432, with the degree of freedom as 402. RMSEA measuring the deviation of the parameter values of a model to its population covariance matrix, this indicates a statistical trend of rejecting the model with a large sample size, RMSEA between 0.05 and 0.08 showing the suitability of fit model. In this research had an RMSEA of 0.153, which means the suitability of the model is not good. IFI and CFI indicate the suitability of a good model when approaching value 1. In this research had IFI of 0.579 and CFI of 0.573, which means the suitability of the model, is not good. The value of RMSEA, IFI, CFI shows the model of this research method cannot be used as a prediction. The results of this study indicate the dimensions of tangibility, reliability, and assurance have the highest effect on service quality (regression weights of 1.00 each), and the responsiveness dimension has the lowest effect (regression weight 0.17) on dental service quality in Bantaeng Regency. Each item has no statistical relationship.

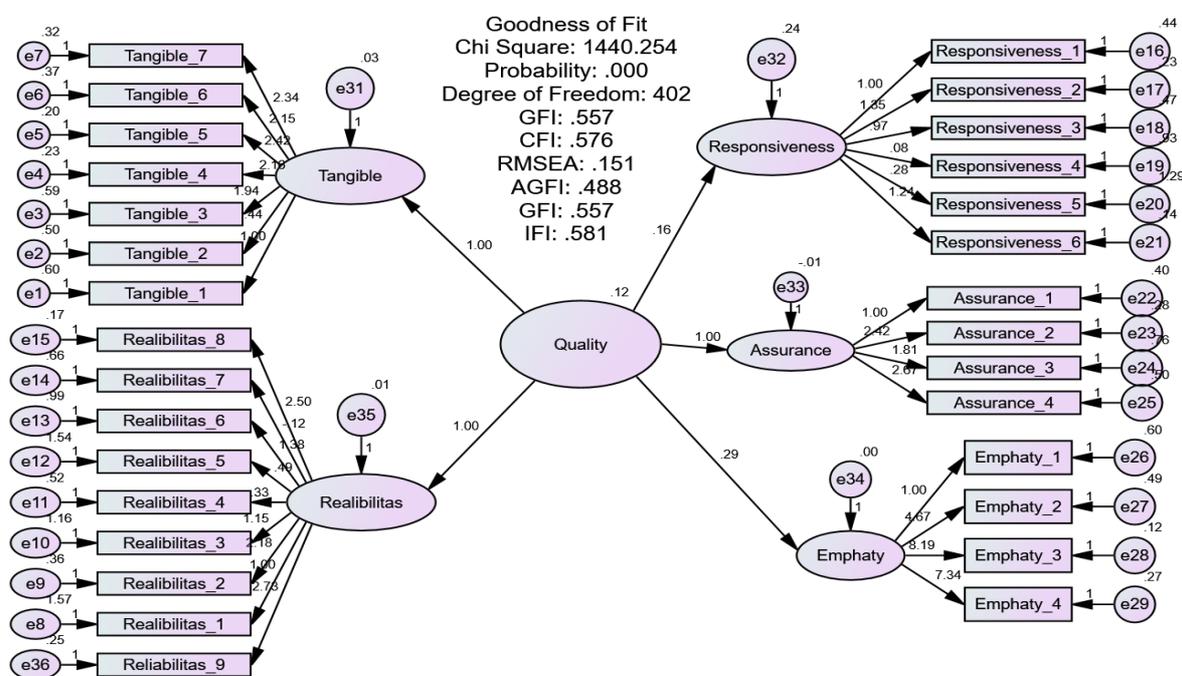


Figure 1. Confirmatory factor model.

Discussion

In this study found the subject of the female more dominant than male. This is in accordance with previous research conducted in dental hospital in Jakarta, Indonesia, in which the employees and public society were more dominate by the female. Research conducted with 368 patients in urban and rural hospitals in India mentions that female are more sensitive to emotion and empathy while male more likely to care for the better physical environment and rapid response [10]. This study also revealed the number of respondents who came from urban areas more than rural areas. This is also in line with Pramanic research in India that compares urban and rural areas [10]. The urban

hospital environment, the quality of care and other services are better in urban areas, so urban patients tend to be more numerous than rural areas with only a few community health centers.

Questionnaires in this study discuss the five dimensions of tangibility, reliability, responsiveness, assurance, and empathy and in the form of 30 questions. This questionnaire has a Coefficient Cronbach α over 0.6 which means reliable on each dimension. In the dimension of tangibility, the items of “the clinic employees should be clean, neat, tidy and appropriate to their professions” has the highest mean. This is in accordance with research conducted at a hospital in Burdwan, India. This is because the appearance of each employee is so important that the patient is able to distinguish the dentist and the nurse. In the dimension of reliability, the item of “The dentist should give patients useful and necessary advice for preventing them from other diseases” has the highest mean. This is to prevent the spread of the disease further and provide additional knowledge for patients. In addition, so that patients do not feel pain in the future. In the dimensions of responsiveness, the item of “A secretary should always be accountable for arranging the time of treatment session by phone or in person” has the highest mean.

That subsequent service waiting times for restricted patients providing good trust to service providers can save time, money and personnel also increase patient confidence in service providers. Meanwhile, on the dimensions of assurance, the item of “In a good dental clinic, the employees should always behave towards patients with respect and courtesy and ensure their privacy” and the dimension of empathy, the item of “The clinic employees should pay particular attention to each patient’s costs of dental services and should be assured that they are affordable for patients” has the highest mean of each item. That communication skills between employees and patients are very important. If in a health service center does not have a specialist service, then interpersonal communication gives the perception of good service quality [9].

The changes in the health care system and the key role of healthcare providers in maintaining oral health play an important role in improving dental health services and promoting oral health. In addition, because patient satisfaction is closely related to service quality, their perception can determine failure and gaps, and the quality of dimensions and items can develop effective strategies to improve quality [9,11]. Therefore, the authors aim to identify factors affecting the quality of dental clinic services as perceived by patients visiting dental clinics in hospital or healthcare service in Bantaeng Regency. Based on the CFA of this study, the dimensions of tangibility, reliability, and assurance have the highest influence on the quality of dental clinic services.

The dimensions of tangibility concern the physical facilities, equipment, personnel and materials that can be felt by the five human senses [12]. This dimension has a significant influence on the quality of dental clinic services in Bantaeng Regency. This is in line with research in Chennai, India at private and government hospitals. This research suggests that infrastructure facilities should not only be attractive, but also should be hygienic. In addition, it was also revealed that infrastructure has significantly correlated to patient satisfaction [13]. This is also in line with

research conducted 168 samples comparing service quality using SERVQUAL method and SERVPERF. Based on this research, the Tangibility dimension has the highest average value on the SERVQUAL method and is second in the SERVPERF method. This study also revealed a significant correlation on the Tangibility dimension between SERVQUAL and SERVPERF methods [1]. This study examined the relationship between service quality through patient satisfaction level and behavioral intention at several hospitals in India with a total sample of 493 people. This study revealed that the tangibility or physical appearance of a hospital has a positive impact on patient satisfaction. [2] However, research in India in 385 subjects revealed that of the 5 dimensions of service quality that have been studied, the dimension of tangibility has the lowest correlation [9]. A study conducted in 6 teaching hospitals in Iran regarding the patient's perception to evaluate the quality of service shows that the assessment of the quality of hospital services in general is highly dependent on the dimensions of tangibility that indicate the patient's expectation of very high dimension tangibility, especially regarding the physical environment, equipment, payment process and hospital hygiene [3].

The dimension of reliability is the ability of service providers to provide services safely and efficiently. This describes the consistent performance, appropriate procedures and acceptable to the patient. Service providers must comply with what is promised, without the need to rework [12]. Health services must be effective, this means having to be able to treat or reduce existing complaints, prevent the occurrence of disease and the development and / or extension of existing diseases.

This study states that the dimension of reliability has a significant influence on the quality of dental clinic services in Bantaeng Regency. This is in accordance with previous research conducted in Iran. Examined patient expectations and perceptions of service providers and identified gaps or gaps between them. In this study, the dimension of reliability has the lowest gap with a value of 1.22 and statistically significant effect [14]. This is also in line with the pilot pathfinder survey in Kutai Kertanegara, Indonesia. The subjects of this survey were 192 people who examined patient satisfaction on the quality of service at public hospitals. The survey stated that 177 patients (92.2%) were satisfied with the dimensions of reliability and were the highest levels of patient satisfaction [15]. Research conducted at hospitals in Iran revealed there is a service quality gap on the dimension of reliability is negative and significant between patient expectations and perceptions. Reliability is one of the important dimensions and quality of service. Hospitals must increase their service reliability to obtain patient loyalty [16]. Along with these studies, research in patients with 9 different hospitals in Lahore, Pakistan highlighted that the highest gap seen in the dimensions of reliability to patient expectations and perceptions. This study suggests that patients are less likely to trust services provided by service providers [17].

The dimensions of the assurance are identified as manners, knowledge of employees and their ability to convey confidence [12]. On the results of this study have a significant effect on the quality of dental services in Bantaeng Regency. This is in line with research conducted. Who suggested that the dimension of guarantee to be the highest and significant influence on service quality. This is due

to the assurance dimension including the ability to perform the right action, the latest knowledge, high competency and employee behavior into consideration by the patient who is very important [9].

The dimensions of empathy include accessibility, sensitivity and effort in understanding the needs of users [9]. In this study, the dimension of empathy has a low effect on service quality. This is not in line with research conducted in dental hospital in Jakarta, Indonesia, which revealed that the level of patient satisfaction to the empathy dimension equivalent to the dimensions of reliability, responsiveness and good assurance on the expectations and perceptions of patients [18]. Meanwhile in reveal on SERVQUAL and SERVPERF method, empathy dimension occupy the lowest average in both method have significant correlation [1]. In addition, a study conducted by that the empathy dimension has a significant effect on overall quality of care in 400 patients in 12 hospitals in Turkey [19]. Along with the study, research conducted by in Saudi Arabia shows that the dimension of Empathy has the greatest influence on patient satisfaction. The study states that when patients see service providers give care to them and give special attention it will create higher patient satisfaction [20].

Dimensions responsiveness refers to the availability of service providers to attend voluntarily to users, providing careful service, with quick precision and response. This involves the availability of institutional employees to assist users and immediately provide such services [12]. In this study, responsive dimensions have the lowest influence on dental clinic service quality in Kecamatan Bantaeng and Pajukukang. This is in line with research conducted at Al-Bashir Hospital, Jordan, states that respondents have responsive assessment as a medium criterion. This study also states that responsive dimensions have a lower impact than the guarantees, reliability and tangibility dimensions and statistically insignificant differences. This is due to the lack of staff in the hospital is also a heavy workload [21-28].

Conclusion

Factors affecting dental service quality in Bantaeng Regency on the dimensions of tangibility / physical condition, reliability and assurance.

Financial Support: None.

Conflict of Interest: The authors declare no conflicts of interest.

References

- [1] Rodrigues LL, Barkur G. Comparison of SERVQUAL and SERVPERF metrics: An empirical study. *The TQM Journal* 2011; 23(6):629-43. <https://doi.org/10.1108/17542731111175248>
- [2] Byram RNJA. Healthcare service quality effect on patient satisfaction and behavioral intention: Empirical evidence from India. *Int J Pharm Healthcare Mark* 2016; 10(1):48-74. <https://doi.org/10.1108/IJPHM-07-2014-0043>
- [3] Mohebifar R, Hasani H, Barikani A, Rafiei S. Evaluating service quality from patient's perceptions: Application of importance e performance analysis method. *Osong Public Health Res Perspect* 2016; 7(4):233-8. <https://doi.org/10.1016/j.phrp.2016.05.002>

- [4] Departemen Kesehatan Republik Indonesia. Law of The Republic Indonesia Number 36 in 2009 on Health. Available at: [http://www.depkes.go.id/resources/download/general/UU Nomor 36 Tahun2009 tentang Kesehatan.pdf](http://www.depkes.go.id/resources/download/general/UU%20Nomor%2036%20Tahun2009%20tentang%20Kesehatan.pdf). [Accessed on August 14, 2018] [In Indonesian]
- [5] Indonesia. Central Bureau of Statistics. Bantaeng Regency in number 2017. [In Indonesian]
- [6] Indonesia. Central Bureau of Statistics. Banateng District in number 2017. [In Indonesian]
- [7] Indonesia. Central Bureau of Statistics. Pajukukang District in number 2017. [In Indonesian]
- [8] Parasuraman A, Zeithaml VA, Berry LL. A conceptual model of service quality and its implications for future research. *J Market* 1985; 49(4):41-50.
- [9] Bahadori M, Raadabadi M, Ravangard R, Baldacchino D. Factors affecting dental service quality. *Int J Health Care Qual Assur* 2015; 28(7):678-89. <https://doi.org/10.1108/IJHCQA-12-2014-0112>
- [10] Pramanik A. Patients' perception of service quality of health care services in India: A comparative study on urban and rural hospitals. *J Health Manag* 2016; 18(2):205-17. <https://doi.org/10.1177/0972063416637695>
- [11] Daniel CN, Berinyuy LP. (2010) Using the SERVQUAL model to assess service quality and customer satisfaction. An empirical study of grocery stores in Umea. [Thesis]. Umea School of Business, 2010. Available at: <http://www.diva-portal.org/smash/get/diva2:327600/fulltext01.pdf>. [Accessed on August 14, 2018]
- [12] Pena MM, Silva EMS, Tronchin DMR, Melleiro MM. The use of the quality model of Parasuraman, Zeithaml and Berry in health services. *Rev Esc Enferm USP* 2013; 47(5):1227-32. <https://doi.org/10.1590/S0080-623420130000500030>
- [13] Padma P, Rajendran C, Lokachari PS. Service quality and its impact on customer satisfaction in Indian hospitals. *Benchmarking* 2010; 17(6):807-41. <https://doi.org/10.1108/14635771011089746>
- [14] Aghamolaei T, Eftekhaari TE, Rafati S, Kahnouji K1, Ahangari S, Shahrzad ME, et al. Service quality assessment of a referral hospital in Southern Iran with SERVQUAL technique: Patients' perspective. *BMC Health Serv Res* 2014; 14:322. <https://doi.org/10.1186/1472-6963-14-322>
- [15] Akbar FH, Jaya MT. Relationship between service quality on public health center and patient satisfaction. *Global J Health Serv* 2017; 9(7):96-102. 2017. <https://doi.org/10.5539/gjhs.v9n7p96>
- [16] Qolipour M, Torabipour A. Assessing medical tourism services quality using SERVQUAL model: A patient's perspective. *Iran J Public Health* 2018; 47(1):103-10.
- [17] Shafiq M, Naeem MA, Munawar Z, Fatima I. Service quality assessment of hospitals in Asian context: An empirical evidence from Pakistan. *Inquiry* 2017; 54: 46958017714664. <https://doi.org/10.1177/0046958017714664>
- [18] Tebai Y, Maharani DA, Rahardjo A. Cross-cultural adaptation and psychometric properties of the Indonesian version of Servqual for assessing oral health service quality. *J Int Dent Med Res* 2017; 10(3):945-51.
- [19] Zaim H, Bayyurt N, Zaim S. Service quality and determinants of customer satisfaction in hospitals: Turkish experience. *Int J Econ Business Res* 2013; 9(5):51-8. <https://doi.org/10.19030/iber.v9i5.8145>
- [20] Alghamdi FS. The impact of service quality perception on patient satisfaction in government hospitals in Southern Saudi Arabia. *Saudi Med J* 2014; 35(10):1271-3.
- [21] Al-Damen R. Health Care service quality and its impact on patient satisfaction 'Case of Al-Bashir Hospital. *Int J Business Manag* 2017; 12(9):136. <https://doi.org/10.5539/ijbm.v12n9p136>
- [22] Akbar FH, Pratiwi R. Patient satisfaction against the quality of dental health service at dental polyclinic of Tenriawaru General Hospital in Bone Regency. *J Dentomaxillofac Sci* 2016; 1(3):352-60. <https://doi.org/10.15562/jdmfs.v1i3.313>
- [23] Samad R, Akbar FH, Pasiga BD, Pratiwi R, Anwar AI, Djamaluddin N, Afyah N. Evaluation of patient satisfaction on quality of public dental health service from different dimensions in Indonesia. *Pesqui Bras Odontopediatria Clin Integr* 2018; 18(1):e4033. <https://doi.org/10.4034/PBOCI.2018.181.49>
- [24] Akbar FH, Pasiga B. Patient satisfaction level with health care quality at Dental Hospital of Hasanuddin University. *Adv Social Sci Educ Human Res* 2018; 127:253-8.
- [25] Akbar FH, Pratiwi R, Cendikiawan R. Relationship between oral health status with knowledge, attitude, and behavior of elementary school children. *J Int Dent Med Res* 2017; 10(3):921-6.
- [26] Husain FA, Tatengkeng F. Oral health-related quality of life appraised by OHIP-14 between urban and rural areas in Kutai Kartanegara Regency, Indonesia: Pilot pathfinder survey. *Open Dent J* 2017; 11:557-64. <https://doi.org/10.2174/1874210601711010557>

- [27] Akbar FH, Pratiwi R, Samad R, Fanissa F. Patient satisfaction on health service center in urban and rural area. *Adv Health Sci Res* 2017; 2:92-9.
- [28] Akbar FH, Ayuandika U. Gender and age differences in patient satisfaction with dental care in the urban and rural areas of Indonesia: Pilot pathfinder survey. *Pesqui Bras Odontopediatria Clin Integr* 2018; 18(1):e4093. <https://doi.org/10.4034/PBOCI.2018.181.80>