

Questionnaire Design for Resolution of Healthcare Provider-Patient Conflict*

Xiaoxi Liu** · Byung Cho Kim***

《目 次》

Abstract	III. Theoretical analysis and assumptions
I. Introduction	IV. Methodology
II. Literature Review	V. Conclusion

Abstract

Conflicts between healthcare providers and patients often occur due to their differences in cognitive differences regarding healthcare service quality. Despite its importance, existing literature lacks rigorous testing methods for cognitive differences between healthcare providers and patients. In this paper, we propose a questionnaire design to confirm the existence of cognitive differences. We select five dimensions from the SERVQUAL model and three dimensions based on the characteristics of the healthcare service industry to compose the questionnaire. We also provide a guideline to further analyze the causes of cognitive differences based on a regression model.

* This research was financially supported by the Institute of Information and Operations Management, Seoul National University.

** Ph.D. Candidate, Department of Logistics, Service and Operations Management, Korea University Business School, Korea University (polar1018@korea.ac.kr)

*** Professor, Department of Logistics, Service and Operations Management, Korea University Business School, Korea University (bkim@korea.ac.kr), Corresponding Author

I . Introduction

With the development of society, healthcare is one of the fastest-growing service industries. However, as the healthcare industry grows, the conflicts between patients and healthcare providers increase. In the past decade, there are increasing cases of healthcare provider-patient disputes, especially in China. The reasons for this phenomenon are various, such as imperfect national healthcare policy, the absence of sufficient healthcare resources, the frequent occurrence of medical accidents, and social networking sedition. Among these reasons, a radical one is cognitive difference regarding healthcare service quality between healthcare providers and patients. Most of the healthcare provider-patient disputes are raised because medical treatments do not meet patients' expectations, or patients feel that healthcare providers do no dedicated medical treatments.

During the process of designing the healthcare delivery system, it is vital to comprehend the service quality perceptions of both patients and healthcare providers and make efforts to reduce the cognitive gap. The purpose of this work is to analyze and resolve the healthcare provider-patient disputes in the perspective of service quality cognitive difference between patients and healthcare providers. Specifically, an inspection will be executed first to examine whether there is a structural difference in healthcare service perception between patients and healthcare providers. Then, if the inspection result shows that there exists a structural difference, a further test will be taken to figure out which dimension plays an essential role in the cognitive difference.

We provide a questionnaire that is developed on the assumptions and the questionnaire dimensions of SERVQUAL. Both healthcare providers and patients should be asked to answer the questions individually, and if possible, a pair of patient and healthcare provider should answer the questions based on the same healthcare case. However, there is no need to answer the questionnaire before the service process. The aim of the questionnaire is to examine the cognitive difference between patients and healthcare providers, not the perception gap between before and after service. Therefore, we will

not use the research method of SERVQUAL, but only employ it as a reference for the questionnaire.

After obtaining the questionnaire results from healthcare providers and patients, F-test and T-test will be used to test the difference between the service perception of patients and healthcare providers. If the results show that there exists a difference, then the multi-regression analysis will be employed to measure the impact level of each dimension in the questionnaire and figure out the significance ones.

II. Literature Review

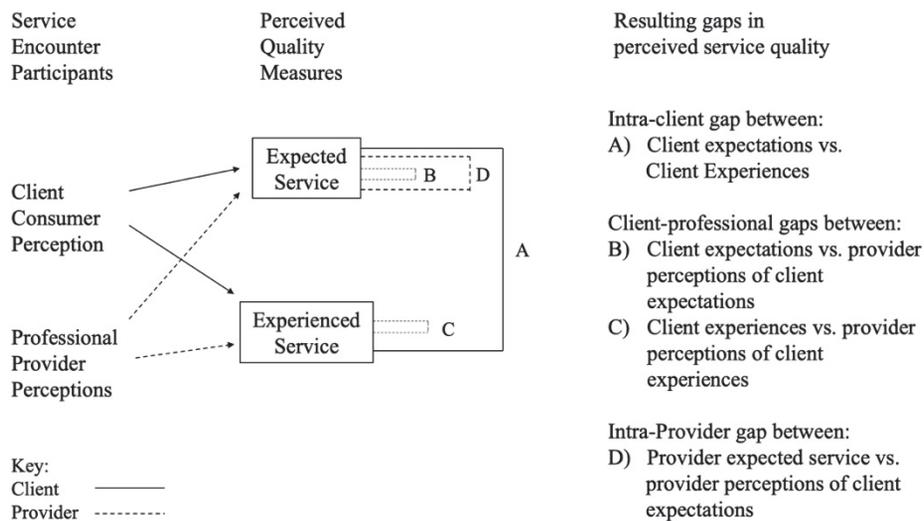
2.1 Service quality of healthcare

The essence of healthcare is credence purchase (Butler et al., 1996). Healthcare is considered a personalized need. Specifically, the patients do not have control of the entry to and exit from services and have to give up their confidentiality and collaborate with healthcare providers. (Pai & Chary, 2013). The quality of the product and service has to be measured exactly by a professional operating system. It is not easy to examine the quality of the service product because of its intangibility. In the service matrix proposed by Schmenner (1986), the performance of healthcare service cannot be standardized, and the effects of medical treatment vary among different patients. Since healthcare is a joint production, it is required that the patient participate in the service, cooperate and coordinate closely with healthcare providers. The joint productions, including business consulting and healthcare services, provide “quantity” which is challenging to assess. Thus, it is extremely difficult for the patients and healthcare providers to reach the same evaluation on the performance of the treatment provided (Karmarkar & Pitbladdo, 1995).

Inconsistent expectations between patient and professional healthcare provider can compromise service performance assessments when examining medical treatment and professionalism. Lehtinen and Lehtinen (1982) put forward a three-dimensional method for assessing the quality of service. The first dimension involves the physical quality related to the formal aspect of service. The second is the interactive quality. The last

is enterprise quality. Thus, when designing the healthcare service system, it is essential to learn more about the quality that patients and healthcare providers possess.

A conceptual model for evaluating professional service quality is proposed by Swartz and Brown (1989), which is shown in Figure 1. Insight into the power of perception can be gained by examining patients' and healthcare providers' perceptions of expected and experienced services.



〈Figure 1〉 Conceptual model evaluating professional service quality.

2.2 Perception of healthcare service

It is acknowledged that customer satisfaction is highly related to service quality. Managers are supposed to bear in mind that though the design of service contributes a lot to the process; however, if it does not meet customers' expectation, the quality will still be low. Therefore, Sampson(1999) states that customers will not use the service if it fails to meet their requirements. Understanding the customers' feeling about the quality and assessing quality is more important than ever, since the market changes faster and becomes more and more competitive (Braunsberger & Gates, 2002). Woolley et al. (1978) state that the patients' satisfaction is the combination of the performance, continuity of care, patients' expectation, and mutual communication

between patients and healthcare providers.

More and more evidence suggests that customers' perception of the quality of healthcare affects patients' behavior more significantly than ease of access and how much it costs. The influences of perception of quality and satisfaction on purchase intention in the healthcare industry are more apparent compared to other services (Baker & Taylor, 1997). They show that the evaluation of satisfaction is more critical for outcome behavior than the quality in the hospital setting. A framework for the quality perception of patients was developed by Andaleeb (2001), the measures of which were also provided. There are five dimensions in the framework, i.e., responsiveness, assurance, communication, discipline, and baksheesh. Besides, some forms of education to patients are critical in terms of the perception of healthcare services. Studies suggest that the quality of healthcare is based on the perception of patients. However, there are some researches focus on healthcare providers since they are both service providers and consumers. Interviews conducted by Gupta (2008) tested the quality of healthcare and showed the factors affecting the quality of healthcare services.

2.3 Approach to healthcare service quality

Multiple sorts of measuring methods for healthcare service have already been proposed by some studies, among which the most commonly used one is SERVQUAL (Parasuraman et al., 1988; Walbridge & Delene, 1993). It is reported that the SERVQUAL method should be modified for different departments (Carman, 1990; Babakus & Boller, 1992). The empirical test provided by Haywood and Stuart (1988) suggests that SERVQUAL fails to cover all aspects that should be tested. The coverage of dimensions of main service, customized service, as well as knowledge, should be included to SERVQUAL. It is also reported that professionalism and professional ability are considered as crucial factors affecting the perception of service quality (Brown and Swartz, 1989).

Lee et al. (2000) provide an updated version of SERVQUAL covering core medical services and professional skills. It requires that the healthcare service providers assess the quality of service using the modified method. Nevertheless, Pai and Chary (2016)

emphasize that there are needs for tools to access the quality of medical services at the hospital. They proposed a conceptual framework in 2016, which covers dimensions, including healthy environment, hospital image, credibility, and communication. Pilgrimienė (2012) studies the effect of several measurements on the evaluation of healthcare service. It is found that multi-item surveys are more useful when the quality of services needs to be diagnosed.

III. Theoretical analysis and assumptions

Research indicates that satisfied employees induce satisfied customers, implying that satisfied employees increase customer satisfaction, that in turn enhance employee satisfaction (Zeithaml et al., 1996). There is a complicated, interrelated relationship between patients' perception and healthcare providers' perception of healthcare service quality, and these perceptions will have a vital impact on patients' satisfaction of service and healthcare providers' job satisfaction. Below shows a theoretical discussion on the reason that gives rise to the conflict between patients and healthcare providers based on the situation of China, as well as our assumptions.

3.1 Different criterion

The previous study (Karmarkar & Pitbladdo, 1995) proposed that in service markets, the difficulty to get a consistent perspective of service quality make the price of service is determined by the input rather than output. However, in the situation of healthcare service, the input of the patient is the significant amount of medical expense, and the input of the healthcare provider is time for accumulating medical knowledge and treatment. Thus, the different criterion makes it more challenging to get a common cognitive on service input and output.

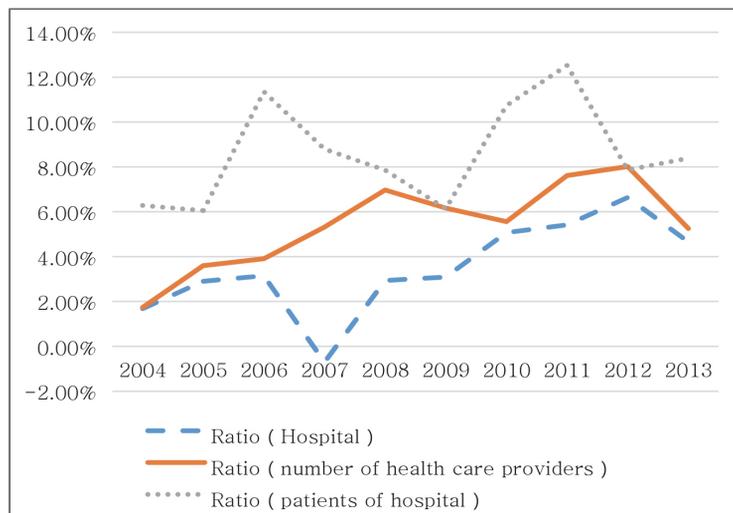
According to Jun et al. (1998), patients are typically not capable of assessing the technical quality of the care that they receive. It would be tough to adequately raise the patients' level of knowledge about the technical aspect of quality. Restricted by the medical knowledge, the service quality expectation of patients and healthcare

provider would vary greatly. Patients may have an unrealistic expectation on healthcare providers, and when healthcare providers had made their professional judgement on a single case, it may differ from the patients' expectation.

H_1 : The expectation for healthcare service of patients and healthcare providers are inconsistent.

3.2 Resource shortage and high expenditure

The massive population of China results in a considerable number of patients, and thanks to the increasing rapid aging society and aging patients. The first problem raised by the massive number of patients is a queuing problem, resulting from lack healthcare resource and capacity for the vast population. Also, because of the enormous demand, it is painful and needs a long time to access and execute a booking service. According to this fact, there even generate a new job which provides queuing service for the patient, with a considerable charge. Figure 2 shows the comparison of the increasing ratio of the hospital, healthcare providers, and patients in recent ten years.



*Data resource: National Bureau of Statistics of the People's Republic of China.

<Figure 2> Comparison of the increasing ratio of the hospital, healthcare providers, and patients

As shown in Figure 2, the increasing ratio of patients in the hospital is always higher than the increasing ratio of the hospital and healthcare providers. Also, because of the strained relationship between patients and healthcare providers, the college students and their family are becoming not willing to choose this dangerous and challenging job. Therefore, the problem of healthcare resource shortage deserves great importance. If the shortage problem could not be solved, the healthcare provider-patient relationship will be caught in a vicious circle.

Table 1 shows a comparison between China, the United States, and Korea in the aspects of the ratio of private expenditure on healthcare to total expenditure on healthcare, and the ratio of government expenditure on healthcare to total government expenditure.

〈Table 1〉 Comparison of China, the United States, and Korea

Year	China		U.S.		Korea	
	1	2	1	2	1	2
2002	64.2	9.4	56.1	17.8	45.8	11.2
2003	63.8	9.7	56.3	18.1	47.8	9.4
2004	62.0	10.1	55.9	18.5	47.4	10.6
2005	61.2	9.9	55.8	18.5	47	11.3
2006	59.3	9.9	55.1	19.1	45.3	12.1
2007	53.1	10.9	55	19	45.3	12.2
2008	50.1	11.6	54.1	19	45.5	11.9
2009	47.5	12.1	52.9	18.7	43.5	12.3
2010	45.7	12.1	52.6	19	43.4	12.4
2011	44.1	12.5	52.7	19.5	44.5	11.8
2012	44.0	12.5	53	20	45.5	11.7
2013	44.2	12.6	52.9	20.7	46.6	11.5

*1: Ratio of private expenditure on healthcare to total expenditure on healthcare.

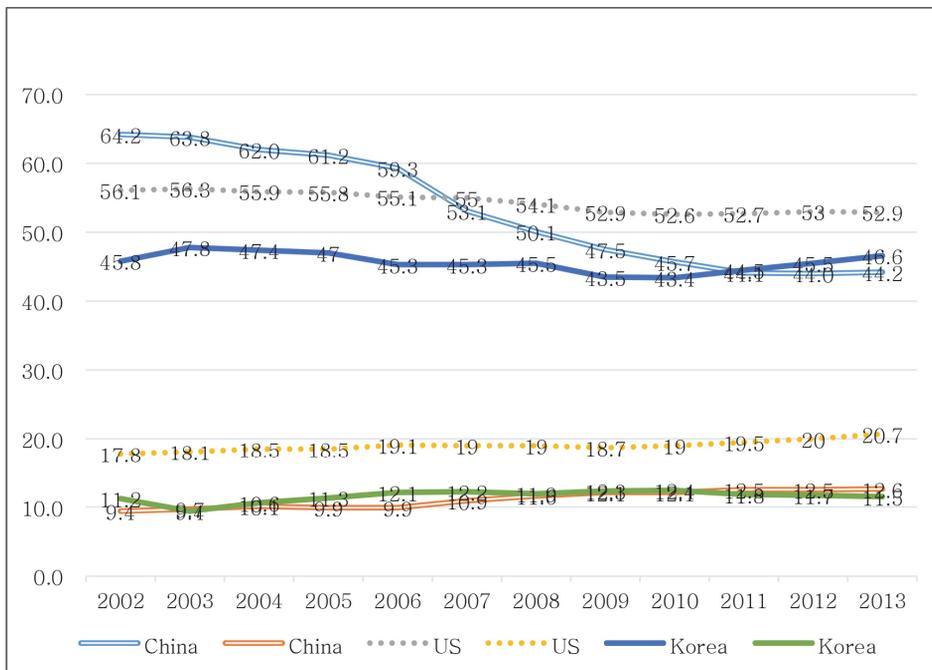
2: Ratio of government expenditure on healthcare to total government expenditure.

Data resource: WHO

As shown in Table 1 and Figure 3, the ratio of the government expenditure on healthcare to total government expenditure of China is lower than Korea until 2010 and much lower than that of the United States. Although the ratio of private expenditure on healthcare to total

expenditure is continuously decreasing, considering the severe gap between the wealthy and poor, the expenditure on health still is a heavy burden for most people. The burden for healthcare expenditure also is an assignable reason which may lead to the dissatisfaction of patients and their family.

H_2 : The shortage of healthcare resource and high expenditure play a negative and interrelate effect on the healthcare provider–patient relationship.



〈Figure 3〉 Comparison between China, the United States, and Korea.

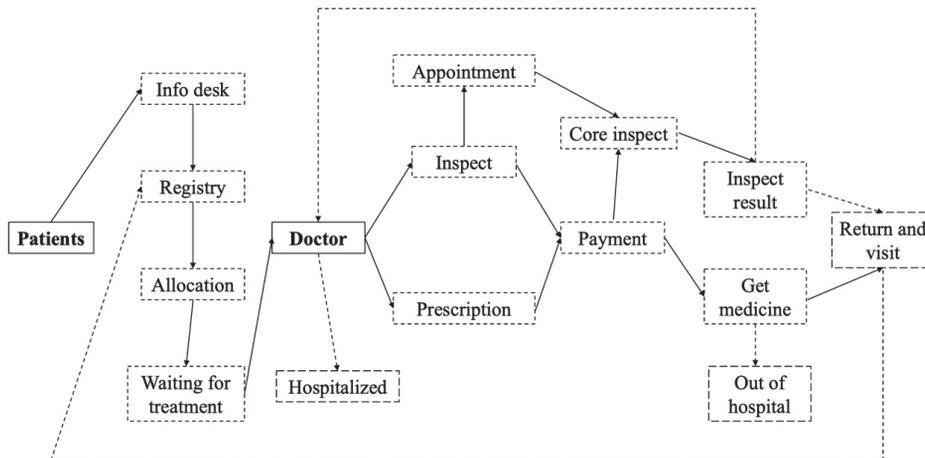
3.3 Low efficiency of the medical system

Though the electronic medical system has been populated in China recently, the complicated process still bothering patients.

As shown in Figure 4, the process of medical treatment in China is very complicated. Almost every segment in this process will take a long time for queuing. The instinct for a living makes patients often go to the hospital with anxiety.

Moreover, considering the situation that China has a majority population, there is a huge crowd of the patient in the hospital every day, the long time for queuing will aggravate their anxiety. Therefore, if the treatment result cannot meet their expectations, they will easy to be irritated. Also, as the key to the treatment process, healthcare providers will quickly be involved in this bad emotion. Thus, regardless of the efficiency of the healthcare providers, the low efficiency of the healthcare system plays a negative role on patients' perception of healthcare service. Patients often already have a dissatisfied emotion with the whole system before they could meet the healthcare providers.

H_3 : The low efficiency of the healthcare system plays a negative impact on the healthcare provider-patient relationship



〈Figure 4〉 Medical treatment process

IV. Methodology

As healthcare service is a joint production, the evaluation of service quality also needs a mutual joint, and the questionnaire will be answered by healthcare providers and patients simultaneously to assess the cognitive difference. The questionnaire is

developed on previous assumptions and SERVQUAL. The five dimensions of SERVQUAL, tangibility, reliability, responsiveness, assurance, and empathy, will be concluded in the questionnaire. Additionally, the three dimensions mentioned in Section 3 also will be included in, which are criteria, healthcare resource, and efficiency. The questionnaire will be designed for patients and healthcare providers separately, but the questions are correspondent.

〈Table 2〉 Example of the questionnaire

Dimension	Question	1	2	3	4	5	Mean score for each question
Tangibility	5	A ₁	A ₂	A ₃	A ₄	A ₅	\bar{A}
Reliability	5	B ₁	B ₂	B ₃	B ₄	B ₅	\bar{B}
Responsiveness	5	C ₁	C ₂	C ₃	C ₄	C ₅	\bar{C}
Assurance	5	D ₁	D ₂	D ₃	D ₄	D ₅	\bar{D}
Empathy	5	E ₁	E ₂	E ₃	E ₄	E ₅	\bar{E}
Criteria	5	F ₁	F ₂	F ₃	F ₄	F ₅	\bar{F}
Healthcare resource	5	G ₁	G ₂	G ₃	G ₄	G ₅	\bar{G}
Efficiency	5	H ₁	H ₂	H ₃	H ₄	H ₅	\bar{H}
Overall evaluation							

Calculate the average score for each dimension:

$$\bar{A} = \frac{A_1 + A_2 + A_3 + A_4 + A_5}{5}.$$

First, employing F-test and T-test to measure whether there is a structural difference between the perception result of patients and healthcare providers. If the result shows a significant difference between service cognitive between patients and healthcare providers, then we use multi-regression to examine the factors that induce the difference.

Assume there is a perception difference between patient and healthcare provider, then use eight dimensions as an explanatory variable and an overall evaluation as

the dependent variable, and run the multi-regression analysis of the result of patients and healthcare providers separately.

The multi regression model is given by:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu_i,$$

where X_1 is tangibility, X_2 is reliability, X_3 is responsiveness, X_4 is assurance, X_5 is empathy, X_6 is criteria, X_7 is healthcare resource, X_8 is efficiency, and μ_i is the error.

By running the multi regression for patient and healthcare provider separately, and find the perspective difference for every dimension according to the estimated slope coefficient. The dimensions with a big perception difference should be improved. The regression result of patient and healthcare providers may differ, for example, the dimension that plays a significant role on patient perception may have a small slope coefficient value in the regression result of healthcare, even with the opposite sign. Therefore, for improving patient's satisfaction, it is crucial to improve the dimensions that patients value.

V. Conclusion

As a kind of service industry, the healthcare service industry needs higher professionalism and greater responsibility than other service industries. When healthcare providers and patients have conflicts due to differences in professionalism, trust, and cognition of service quality, the progress and effect of treatment will be affected, as well as the work of healthcare providers will also be negatively affected. We need to find a way to help patients and healthcare workers promote mutual understanding and trust to improve healthcare provider-patient relationships, and thereby improve the efficiency of the healthcare service industry. This paper studies the cognitive differences in service quality between service providers and recipients combines the national conditions of China. We employ the structure of the SERVQUAL to contribute

a questionnaire for healthcare providers and patients, to help healthcare providers and patients improve their understanding of each other, thus easing the tense healthcare-patient relationship.

Five aspects of the SERVQUAL model, tangibility, reliability, responsiveness, assurance, and empathy, are selected in our questionnaire. Criteria, healthcare resource, and efficiency are added according to the characteristics of the healthcare service industry. Healthcare providers and patients were taken as subjects for questionnaire surveys. F-test and T-test are conducted on the results of the questionnaire survey to test whether there is a difference in the cognition of healthcare providers and patients about the quality of service. If the results show a difference, then multi-regression analysis will be performed on these eight aspects to examine the causes of cognitive differences.

In this study, the causes of healthcare provider-patient conflict were analyzed theoretically, and the methods to improve healthcare provider-patient relationship were proposed. We believe that resolving the tension between healthcare providers and patients has positive implications for both patients and healthcare providers. By studying the characteristics of medical and health services, a service industry without uniform service level standards, we pointed out the reasons and the results of healthcare providers' and patients' different perceptions of healthcare services. In theory, we hope to find out the main causes of healthcare provider-patient disputes through a questionnaire survey, to find solutions. In practice, our questionnaire survey can help a pair of healthcare providers and patients understand each other's cognition of healthcare services, and timely communicate to close the cognitive gap. The method and questionnaire proposed by this work also have the characteristics of high feasibility, low cost, and smooth operation.

Our paper also has some limitations, such as the lack of data collection and analysis due to objective reasons. In future research, we can improve the questionnaire, collect and analyze the data, and find out the main reasons affecting the healthcare provider-patient relationship.

References

1. Andaleeb, S. S. (2001). Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Social science & medicine*, 52(9), 1359-1370.
2. Babakus, E., & Boller, G. W. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business research*, 24(3), 253-268.
3. Baker, T. L., & Taylor, S. A. (1998). Patient satisfaction and service quality in the formation of customers' future purchase intentions in competitive health service settings. *Health marketing quarterly*, 15(1), 1-15.
4. Braunsberger, K., & Gates, R. H. (2002). Patient/enrollee satisfaction with healthcare and health plan. *Journal of consumer marketing*, 19(7), 575-590.
5. Brown, S. W., & Swartz, T. A. (1989). A gap analysis of professional service quality. *Journal of marketing*, 53(2), 92-98.
6. Butler, D., Oswald, S. L., & Turner, D. E. (1996). The effects of demographics on determinants of perceived health-care service quality: the case of users and observers. *Journal of Management in Medicine*, 10(5), 8-20
7. Carman, J. M. (1990). Consumer perceptions of service quality: an assessment of T. *Journal of retailing*, 66(1), 33.
8. Gupta, H. D. (2008). Identifying Health Care Quality Constituents: Service Providers' Perspective. *Journal of Management Research (09725814)*, 8(1).
9. Haywood Farmer, J., & Stuart, F. (1988). Measuring the quality of professional services. The Management of service operations, proceedings of the third annual international conference of the UK operations management association.
10. Jun, M., Peterson, R. T., & Zsidisin, G. A. (1998). The identification and measurement of quality dimensions in health care: focus group interview results. *Health care management review*, 23(4), 81-96.
11. Karmarkar, U. S., & Pitbladdo, R. (1995). Service markets and competition. *Journal of Operations Management*, 12(3-4), 397-411.
12. Lee, H., Delene, L. M., Bunda, M. A., & Kim, C. (2000). Methods of measuring

- health-care service quality. *Journal of Business Research*, 48(3), 233–246.
13. Lehtinen, U., & Lehtinen, J. R. (1982). *Service quality: a study of quality dimensions*. Service Management Institute.
 14. Mefford, R. N. (1993). Improving service quality: learning from manufacturing. *International Journal of Production Economics*, 30, 399–413.
 15. Moore, S. A., & Schlegelmilch, B. B. (1994). Improving service quality in an industrial setting. *Industrial Marketing Management*, 23(1), 83–92.
 16. Pai, Y. P., & Chary, S. T. (2016). Measuring patient-perceived hospital service quality: a conceptual framework. *International journal of health care quality assurance*, 29(3), 300–323.
 17. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12.
 18. Pilgrimiené, Z. (2012). Measurement issues in health care service quality. *Economics and Management*, 17(1), 289–296.
 19. Sampson, S. E. (1999). *Understanding service businesses: Applying principles of the unified services theory*. Brigham Young University.
 20. Schmenner, R. W. (1986). How can service businesses survive and prosper. *Sloan management review*, 27(3), 21–32.
 21. Swartz, T. A., & Brown, S. W. (1989). Consumer and provider expectations and experiences in evaluating professional service quality. *Journal of the Academy of Marketing Science*, 17(2), 189–195.
 22. Walbridge, S. W., & Delene, L. M. (1993). Measuring physician attitudes of service quality. *Marketing Health Services*, 13(1), 6.
 23. Woolley, F. R., Kane, R. L., Hughes, C. C., & Wright, D. D. (1978). The effects of doctor–patient communication on satisfaction and outcome of care. *Social Science & Medicine. Part A: Medical Psychology & Medical Sociology*, 12, 123–128.
 24. Zeithaml, V. A., Bitner, M. J., & Gremler, D. (1996). *Services Marketing*. New York: McGraw–Hill.

