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Overview Study on Assessment of the Quality of Medical Examination and Treatment Services

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Abstract

The objective of the article is to synthesize the results of studies to evaluate the quality of medical examination and treatment services at home and abroad. The literature research methodology helps us find key studies related to the content of medical services. The results of the synthesis of the research work clarified the toolkit used, sample size, research methods, and analytical methods. The results of these studies are presented in turn in the synthesis table. Accordingly, the toolkit used in other authors' studies is mainly developed from conventional service scales. The study is mainly cross-sectional research and uses analytical

methods of statistics to clarify patients' satisfaction with the quality of medical services. The article has reviewed and evaluated that these toolkits have some limitations when applied in Vietnam. These studies have not comprehensively assessed several stakeholders, directly affecting the quality of service and patient satisfaction, namely the support staff and decision-making leaders of the health facility. The results of this article's research are the basis for developing a scale to assess the quality of medical examination and treatment services suitable for regions of Vietnam.

Keywords: Systematic Review, Service Quality, Medical Examination and Treatment Services

1. Introduction

A medical examination and treatment establishment is a service provider, the subjects providing services are people who come for medical examination and treatment. Services provided are medical products, medical diagnostics and nursing care for patients while they are being treated in medical facilities. Improving the quality of patient care is an important goal contributing to improving the quality of public health, and social security and is the most important goal of the Ministry of Health of Vietnam. Currently, in Vietnam, 94% of medical examination and treatment facilities are public facilities. The situation of medical examination and treatment and service quality at these establishments has not been highly appreciated by the people. They feel the new health services are at an acceptable level. Therefore, many researchers have conducted satisfaction assessments on the quality of services of patients when examining and treating at medical facilities. The study was conducted with the aim of limited consideration and solutions to improve the quality and satisfaction of the population. However, current research often applies and develops service quality assessment toolkits for commercial services and the quality of health services that are completely different from conventional goods. Along with that, some studies using scales and toolkits of foreign authors led to toolkits that were not suitable for the economic conditions and regulations of Vietnam. Therefore, conducting an overview study on the topics that have been assessed for the quality of medical examination and treatment services will provide a basis for considering the suitability of the scales that have been applied and the results when applying these scales in Vietnam. What scales are in line with the requirements and ensure the correct assessment of the quality of medical examination and treatment services at Vietnamese health facilities?

2. Theoretical Basis

According to the World Health Organization, health services include services for diagnosis, treatment of diseases and private and public health care and rehabilitation activities. Medical services are goods that patients often cannot actively choose the "type of service" they want, but depend a lot on the professional opinion of the medical institution. When patients need medical examination and treatment, the treatment method, and how long to treat are completely decided by the doctor and they can only choose the treatment facility. In addition, health services are services associated with human life, so people without

money still have to seek medical treatment. This feature is different from goods, buyers can choose to buy or not buy when they do not have financial ability.

2.1 Provision of Health Services

The efficiency of health service delivery reflects the quality of health services. The provision of health services is considered the main function of the health system, which plays a role in governing the performance of the whole health system in a fair, effective, and quality way. According to Workbook (2000), good health care is "efficient, safe, and quality, delivered to those who need it, at a reasonable time and place, minimizing the waste of resources when provided." The health services provided require providers to ensure the timeliness of the service in terms of the patient's time and needs, "anytime and wherever they need it", ensure reasonable waiting times, efficiency, continuity of services as well as responsive facilities. The roles of the leaders and managers mentioned relate to ensuring that the health policy strategy exists and incorporates the vision and long-term future strategies through regulation, the development of management models and the proper implementation of supervisory responsibilities in the health sector. In order to contribute to improving the health system of the whole country, hospitals, especially and above all public hospitals in our country are also very interested and gradually putting the medical standards of the World Health Organization into practice. In Vietnam today, the Law on Health Insurance provides for health insurance policies, including regulations on the organization of medical examination and treatment for health insurance participants (regulations on the place of registration of primary medical examination and treatment, referral, medical examination and treatment procedures), in particular, the specific objective of our Government and State is to implement according to Decision No. 538/QĐ-TTg on the approval of the project to implement the roadmap towards universal health insurance from 2012 to 2015 and 2020 is to improve the quality of medical examination and treatment of health insurance, ensure the interests of health insurance participants in accordance with the provisions of law, meet the medical examination and treatment needs of health insurance participants.

2.2 Service Quality

The definition and measurement of services are largely rooted in the field of goods production. Parasuraman *et al.* (1985) [12] argue that "perceived service quality" is a comparison between "customer expectations and service performance by the provider", and that service quality evaluation is not based solely on service performance but must include "performance process". "Service quality" is the factor that has the most impact on "customer satisfaction". However, many service businesses often believe that service quality is customer satisfaction. Service quality and satisfaction are closely interrelated but still have some differences. Service quality is an objective, evaluative, and cognitive term. Satisfaction, on the other hand, is a combination of subjective factors based on feelings and emotions. Some studies show that quality of service is the

cause of satisfaction. Satisfaction can be assessed only after using the service since the quality of service relates to the provision of the service. Even if the quality of service improves, if it is not based on customer needs, customers will not be satisfied with the service. Therefore, if customers feel high quality of service when using the service, they will be satisfied with it.

2.3 Quality of Medical Services

Also, according to Health Economics and Health Insurance (2018) by author Nguyen Thi Kim Chuc, the quality of health services is assessed: "The quality of health services with its characteristics makes it not have a uniform definition or measurement". However, there are some definitions of quality of medical services used by many people as follows:

The quality of health services consists of two distinct parts: operational quality, how patients receive services (quality of access to services), and professional quality, the quality of the provision of medical examination and treatment services (capacity and outcomes of treatment).

Quality of medical services includes the application of medical science and technology in some way to maximize health benefits without increasing the corresponding risks resulting from the application of these technologies. Therefore, the quality of medical services is the extent to which health services are expected to provide the most desirable balance between risks and benefits.

Quality of health services is the degree by which the health services used by individuals and communities increase the likelihood of achieving desired health outcomes and are consistent with current professional knowledge.

The quality of medical examination and treatment services is the most effective form of organizing resources to meet the health care needs of those most in need of disease prevention and treatment, safe, and waste-free but still ensuring high requirements.

Quality of health services is the degree to which the internal purposes of a health system are achieved to improve health and meet the wishes of patients.

3. Research Methodology

Documentary research methodology: Collecting, evaluating and analyzing relevant research works that have been carried out at home and abroad to draw and develop the theoretical basis for the topic. The theoretical contents selectively inherit the research results of published scientific works on contents related to the quality of medical examination and treatment at medical examination and treatment facilities. From the important content drawn from the analysis, the author arranges each content and presents it in the article. The research team draws independent theoretical problems with scientific arguments about the quality of services, the toolkit for conducting practical research, and the results of each study. Assess the satisfaction of medical subjects in studies and the factors affecting it.

4. Results

4.1 Content and Toolkit Used in Research

Table 1: Synthesize research works and toolkits used in research

Author	Research	Toolkit to measure service quality, satisfaction
Sower <i>et al.</i> (2001) ^[17]	The dimensions of services quality for hospitals: Development and use of KQCAH Scale	Research and develop a toolkit based on "Hospital Quality Standards of the International Hospital Quality Inspection Organization (JHAHO)". The KQCAH scale provides a way to measure quality and customer satisfaction with eight elements: Respect and care; Efficiency and continuity; Compatibility; Information; Effectiveness; Meal; First impression; Employee diversity.
Marley <i>et al.</i> (2004) ^[9]	The Role of Clinical and Process Quality in Achieving Patient Satisfaction in Hospitals	The authors developed a patient satisfaction research toolkit through three factors: Leadership engagement; Quality of physical examination; Process quality.
Brooks-Carthon <i>et al.</i> (2011) ^[2]	Quality of Care and Patient Satisfaction in Hospitals with High Concentrations of Black Patients	The article assesses the quality of care and patient satisfaction in hospitals with large black populations. The research toolkit developed by the author consists of three elements: Nursing characteristics; The proportion of black patients; Hospital characteristics.
Yıldız & Erdoğan (2004) ^[19]	Measuring Patient Satisfaction of the Quality of Health Care: A Study of Hospitals in Turkey	The topic of patient satisfaction with the quality of healthcare in Turkish hospitals. The research toolkit is built from 7 factors: Nutrition; The care of a doctor; Other services; Chamber space; Admission procedure; Nursing care; The cleanliness of the disease room.
Padma <i>et al.</i> (2010) ^[11]	Service quality and its impact on customer satisfaction in Indian hospitals: Perspectives of patients and their attendants.	Research topic on quality of service and its impact on patient satisfaction in Indian hospitals. The research toolkit includes eight impacting factors: Infrastructure; Staff quality; Clinical care procedures; Administrative procedures; Safety indicators; Hospital images; Social responsibility; Hospital reliability.
Luu (2011)	Patient Satisfaction Study for Da Nang General Hospital	Research on patient satisfaction with Da Nang General Hospital. Set of seven tools used by the author from the KQCAH scale by Sower <i>et al.</i> (2001) ^[17] : Hospital impression and reputation; Appropriateness; information; Effectiveness; Caring attention; Efficiency and continuity; Payment of hospital fees.
Daoud-Marrakchi <i>et al.</i> (2008) ^[5]	"Development of a Tunisian Measurement Scale for Patient Satisfaction: Study Case in Tunisian Private Clinics"	The scale builds from a toolkit of seven elements: hospital impression and reputation; Appropriateness; Information; Effectiveness; Caring attention; Efficiency and continuity; Payment of hospital fees.
Thao (2012) ^[15]	"Solutions to improve the quality of medical examination and treatment for voluntary health insurance beneficiaries in Vinh Long Province".	The measurement toolkit used and developed by the author from Gronroos' quality assessment model, 1984 is: Tangible; Rely; Sympathy; Guarantee; Meet; Functional quality; Technical quality
Chi (2014) ^[4]	Assessing inpatient satisfaction with service quality at Can Tho Central General Hospital	They are selectively incorporating Parasuraman's model of service quality and customer satisfaction. The author uses a five-element toolkit: Procedural process; Meet; Quality of examination and treatment; Quality of care and service; Quality of hygiene-dining.
Thinh (2010) ^[16]	Assessing patients' satisfaction with medical examination and treatment services at the Internal and Paediatric Clinic of the Examination Department, Dong Da General Hospital	The author also applies the Servqual model with a Toolkit consisting of five aspects: Tangible; Believe; Meet; Guarantee; Sympathy
Chien <i>et al.</i> (2014)	Assessing patients' satisfaction with medical examination and treatment at some Grade I General Hospitals under the Department of Health of Ho Chi Minh City	The toolkit applied and developed from the Servqual model is Facilities; Administrative procedures; Treating physicians; Nursing and hygienic care; Security and order.
Ngan & Trang (2014) ^[10]	Assessing inpatient satisfaction with service quality at Can Tho Central General Hospital	The 5-factor toolkit used by Parasuraman is: Procedural process; Meet; Quality of examination and treatment; Quality of care and service, Quality of hygiene-dining.
Ai <i>et al.</i> (2020) ^[1]	Satisfaction level of users of medical examination and treatment services with health insurance cards in Ninh Binh province	The toolkit developed from the quality assessment model of the World Health Organization (WHO) includes 6 elements: Health services provided; Medical products; Medical workforce; Medical information; Medical examination and treatment costs.

Source: Synthesis of research documents related to the research problem of the authors' group

Research and evaluation of the quality of medical examination and treatment are carried out in many regions and parts of the world. That shows that this is an issue of interest to many researchers. The toolkit used in research is applied and developed from models such as the FTSQ model; The SERVQUAL model of Parasuraman *et al.*, (1985) ^[12] and the KQCAH model. Accordingly, the research topic of Sower *et al.* (2001) ^[17] is one of the most important studies in this field. Sower's research team has developed a set of measurement tools based on the hospital quality standards of the U.S. International Hospital Quality

Inspection Organization. The team's scale, called KQCAH, provides a way to measure patient quality and satisfaction with eight factors. The factors are Respect and care for patients; Efficiency and continuity; Appropriateness; Information provided to patients; The effectiveness of health care; The quality of meals for patients; Patients' first impressions of the facility and the diversity of doctors and staff at the hospital. The study of Sower *et al.* (2001) ^[17] and the toolkit that the authors have built have been used by many researchers in evaluating the quality of medical examination and treatment in hospitals. For example, the

study of author Luu (2011) on patient satisfaction with Da Nang General Hospital. The service quality scale of Parasuraman *et al.*, (1985) ^[12] is also one of the scales used to evaluate service quality in many social fields. This scale is based on 10 impact factors including Reliability; Responsiveness; Competence; Accessibility; Courtesy; Communication; Credibility; Security; Tangibles; and understanding. However, in the process of application, some authors only select and apply some components of the scale of Parasuraman *et al.*, (1985) ^[12] such as author Chi (2014) ^[4] to the procedure of the hospital, the responsiveness of the hospital, the quality of examination and treatment, the quality of care and service and the quality of food hygiene for patients. In addition to the two service quality assessment toolkits of Sower *et al.* (2001) ^[17] and Parasuraman *et al.*, (1985) ^[12], the toolkit of Grooss, (1984)

^[6] is also a set of quality assessment tools used by many researchers. Grooss's toolkit, (1984) ^[6] is built with three elements in mind: functional quality, technical quality, and imagery. This toolkit was used by author Thao (2012) ^[15] to develop the research toolkit "Solutions to Improve the Quality of Medical Examination and Treatment for Health Insurance Beneficiaries in Vinh Long Province". Author Thao has built a toolkit of 7 elements: tangibility, reliability, empathy, assurance, responsiveness, functional quality, and technical quality. Thus, we can see studies using and applying different service quality assessment tools. To see if the results of these studies are influenced by the toolkit they employ and develop, let's evaluate the results of this study.

4.2 Results of Studies

Table 2: Summarizes the sample size, research methods, and results of the study

Author	Sample size	Research Methodology	Result
Sower <i>et al.</i> (2001) ^[17]	The study was conducted at 03 public hospitals in the United States. Questionnaire survey of 663 patients	Cross-sectional research, a method of exploratory factor analysis	Eight groups of factors have a very high confidence of variables. Care; Care; Efficiency and continuity of service are determined to affect the quality of hospital services directly.
Marley <i>et al.</i> (2004) ^[9]	The study sample included 202 hospitals in the U.S.	Cross-sectional research, evaluated by structural equation models	Statistical results show Leadership; Process and clinical quality are factors that affect service quality and patient satisfaction.
Brooks-Carthon <i>et al.</i> (2011) ^[2]	Nurse survey collected across four states (Florida, Pennsylvania, New Jersey, and California) in 2006-2007	Cross-sectional secondary analysis, methods of analysis of variance and linear regression	Patients treated in hospitals with a higher concentration of blacks were less satisfied with nursing services and hospital characteristics.
Yıldız & Erdoğan (2004) ^[19]	The sample size included 1100 patients in 31 different hospitals, surveyed using questionnaires	Cross-sectional research, and factor analysis to determine factor structure.	Research provides information for improving patient satisfaction through physicians and hospital leaders.
Padma <i>et al.</i> (2010) ^[11]	The sample size of the study included 204 patients, and a questionnaire.	Cross-sectional studies, analysis using statistical techniques such as two-variable correlation and multiplicity regression.	The study results show that patients cannot fully assess the technical quality of healthcare services and that hospital providers must understand the patient's needs.
Luu (2011)	The sample size of 494 patients, surveyed using questionnaires	Cross-sectional studies, reliability analysis, EFA discovery factors and multiplicity regression.	The results show that patient satisfaction at Da Nang General Hospital is mainly influenced by factors such as suitability, attention and care or effectiveness.
Daoud-Marrakchi <i>et al.</i> (2008) ^[5]	The study surveyed over 150 patients at private clinics	Cross-sectional study, EFA discovery factor analysis	The results showed that there were 6 factors extracted to evaluate patient satisfaction at clinics: welcome, care, information, comfort and hospital fees.
Thao (2012) ^[15]	The study conducted a direct survey of nearly 400 beneficiaries of voluntary health insurance for medical examination at Vinh Long General Hospital	Cross-sectional studies, EFA discovery factor analysis and multivariate regression	The analysis results show that there are three groups of factors affecting the satisfaction of patients participating in Voluntary Health Insurance: Quality of function, quality of patient care and Quality of treatment. In particular, the Functional Quality factor has the most impact on patient satisfaction.
Chien <i>et al.</i> (2014)	The survey sample included 1,137 patients 16 years old who visited and were treated at the hospital, interviewed by questionnaire	Cross-sectional descriptive research	The results showed that 87.8% of patients were satisfied with the facilities, and 73.7% of the treating doctors were satisfied at an acceptable level. In terms of quality of care, nursing has an acceptable level of 74.1%
Ngan & Trang (2014) ^[10]	The sample size of 100 patients	Cross-sectional studies, Cronbach's Alpha testing, and exploratory factor analysis, testing Quantitative Chi Squared	The results showed that there were four factors associated with patient satisfaction with quality. The quality of services at the hospital is Responsive, Quality of Care, Quality of Examination/Treatment and

			Tangible.
Ai <i>et al.</i> (2020) ^[1]	The sample size of 178 patients, questionaired survey	Cross-sectional studies, Cronbach's Alpha testing and exploratory factor analysis, testing	The results showed that five components had an impact on patient satisfaction: the health service had the strongest impact. Next is human resources, medical information and costs of medical examination and treatment and medical products.

Source: Synthesis of research documents related to the research problem of the authors' group

The information about the results of the studies presented in Table 2 shows us that the studies were conducted in many hospitals, in many regions. Subjects surveyed and evaluated are patients or people visiting medical facilities. The sample size of the studies meets the requirements for the analysis method used by the author. The study sample was taken by both methods, namely non-probability sampling and probability sample selection. The research methodology used in these articles is mainly cross-sectional research along with exploratory factor analysis, reliability testing, and linear multivariate regression methods. The results of the studies have completed the objective of assessing the satisfaction of patients or medical visitors with the quality of medical examination and treatment services at health facilities. The results of several studies have shown that factors that strongly affect satisfaction include the quality of doctors, hospital image and policies of surveyed medical facility leaders. Other studies using the scale of Parasuraman *et al.*, (1985)^[12] suggest that the quality of medical services is influenced by facilities, empathy, trustworthiness, and tangible facilities. Some studies applying the scale of the World Health Organization suggest that health information, the capacity of doctors, the cost of medical examination and treatment and medical products strongly affect the quality of medical examination and treatment services and their satisfaction. From the results of the study, we see that the use of different sets of scales and different factors does not affect the quality of the study. Each author uses research methodologies and research toolkits based on the characteristics of the object of study and the area of study. However, it should be noted that the scale of Grooss, (1984)^[6] is ineffective because patients do not have enough knowledge to assess the technical quality of medical examination and treatment services. Therefore, we consider that the scale of Grooss, (1984)^[6] is not entirely suitable for application to studies evaluating the quality of medical services.

5. Conclusions

With the overview research method, the article has clarified the research objectives and identified toolkits used and developed by the authors when evaluating the quality of medical examination and treatment services at medical facilities. These studies mainly focus on evaluating a number of issues on the theoretical basis system of the quality of medical examination and treatment services, assessing the satisfaction of patients when using services. However, in studies that have not mentioned and have not surveyed service staff and management leaders at health facilities, the generality is not high. Regarding the research model, the above overview documents mainly apply the SERQUAL service quality scale (Parasuraman *et al.*, 1985)^[12], the service quality assessment model of Gronroos (2001)^[17], and the KQCAH model (1998) developed by Sower *et al.* specifically for assessing service quality in the

health sector based on the previous JCAHO model; that. The assessment of patient satisfaction is mainly based on factor analysis methods and multivariate regression models, probit regression to consider the impact of factors on patient satisfaction with service quality at one or more hospitals in the study area.

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