

Patient Satisfaction in Negative Pressure Rooms, Dental Teaching Hospital, Universitas Trisakti

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Abstract

Background : Negative pressure rooms in dental hospitals are built to mitigate the risks of COVID-19, viruses, and other infectious diseases, ensuring the safety of patients, dentists, nurses, and the overall hospital environment. Patient satisfaction is a priority, measured through the Service Quality (Servqual) framework, which evaluates five dimensions: Tangibles, Responsiveness, Reliability, Assurance, and Empathy. Additionally, the Importance-Performance Analysis (IPA) method can identify key questions and dimensions prioritized in quadrant I. **Objective** To assess patient satisfaction in the negative pressure room at the RSGM-P FKG USAKTI academic clinic. **Methods** A descriptive observational study was conducted using a cross-sectional research design involving 109 participants. Data collection utilized a questionnaire that included 30 questions focused on importance and 30 questions focused on performance. **Results** Patients expressed satisfaction with the services provided in the negative pressure room at KIH RSGM-P Trisakti University, achieving an average performance score of 3.61 and an importance score of 3.7. **Conclusion** Patients are satisfied overall, but two dimensions that require improvement are responsiveness and assurance. Key areas for enhancement include the speed of response to patient complaints, operators' knowledge, communication skills, and nursing services.

Keywords

negative pressure room, satisfaction, service, dentistry

BACKGROUND

In Indonesia, the first case of Coronavirus Disease 2019 (COVID-19) was detected in March 2020. It was caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which spread to several provinces in Indonesia.¹ There is a negative impact on dental professional activities due to work procedures that carry a high risk of transmission of the COVID-19 virus originating from saliva, both to health workers and other patients.

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BACKGROUND

In Indonesia, the first case of Coronavirus Disease 2019 (COVID-19) was detected in March 2020. It was caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which spread to several provinces in Indonesia.¹ There is a negative impact on dental professional activities due to work procedures that carry a high risk of transmission of the COVID-19 virus originating from saliva, both to health workers and other patients. Therefore, the public needs health service facilities that can prevent the spread of COVID-19 in the dental health sector and mouth.^{2,3} Patients with SARS-CoV-2 infection often show diverse oral manifestations, and dentist's knowledge is needed for identification and treatment.⁴

The negative pressure room is an infection control room for isolation for patients affected by airborne infectious diseases such as tuberculosis (TBC), measles, Middle East Respiratory Syndrome (MERS), SARS, and COVID-19. Dentists have a responsibility to prevent and control infections to avoid or reduce the possibility of transmitting microorganisms during treatment procedures.⁵ Negative pressure rooms in dental practices are designed to reduce the spread of viruses to patients so that they do not pollute the air in the practice room and other rooms. They can also reduce the exposure of dentists and nurses to aerosols during the treatment process. The use of tools in dentistry results in exposure to saliva, blood, or other body fluids, which have the potential to cause infection.⁶⁻⁸

Indonesia has entered the post-pandemic phase, and people are starting to carry out activities as in the pre-pandemic period.^{9,10} According to the Indonesian Dentists Association (PDGI), in 2020, regarding the Dentists' Guide in the New Normal Era, every dentist needs to know the various characteristics of the SARS-CoV-2 virus and the standards for preventing its spread in implementing dental practice in the new normal era. Personal protective equipment (PPE) must be used before treatment, and sterilization protocols must be followed in dental practice during the new normal.¹¹

The development of science and technology in dental and oral health, including health services, is increasingly rapid. Health services are important for producing patient satisfaction, which is the patient's response to the difference between the level of expectations and the actual performance experienced during treatment.¹² Patients feel satisfied if their health services match or exceed expectations. Five dimensions describe tangible consumer service quality: responsiveness, reliability, assurance, and empathy.¹³ Health service facilities, such as hospitals, health centers, doctor's practices, and others, are primarily responsible for providing the best health services to patients and supporting patient satisfaction.¹⁴ This study aimed to

determine the description of patient satisfaction using negative pressure rooms at the academic clinic RSGM-P FKG USAKTI using the Service Quality (Servqual) and Importance-Performance Analysis (IPA) methods.

METHODS

This study is a descriptive observational research with a cross-sectional design. An accidental sampling method was used to obtain a sample size of 109 people. Variables included in this study were age, gender, education, occupation, area of residence, patient satisfaction which was obtained from the table of average levels of expectations and performance, service quality scores, and the Importance-Performance Analysis (IPA) diagram. The tool used is a Google Form questionnaire, consisting of 30 interest questions and 30 performance questions, divided into 5 dimensions: tangible, responsiveness, reliability, assurance, and empathy.

Validity (Pearson correlation) and reliability (Cronbach's Alpha) tests were carried out on 30 respondents. The validity test is valid if $r_{table} > r_{count}$ (> 0.361). The validity test resulted in 30 valid interest questions and 29 valid performance questions. One question was invalid in the performance group, but the researchers still included it in the questionnaire because it was considered important. Based on the data obtained, the reliability test of the 30 interest questions is 0.9548, and the 30 performance questions is 0.9465. Thus, the questionnaire was considered reliable. This research was approved by the FKG USAKTI Health Research Ethics Commission with approval number 686A/S1/KEPK/FGK/9/2023.

RESULTS

All of the respondents were aged 15-64, with 109 people (100%). The majority of respondents were female, 76 people (69.7%). The recent level of education for most of the respondents was SMA, with 56 people (51.4%). Most of the respondents did not work, with 65 people (59.6%) and 76 people (69.7%) living in Jakarta (Table 1).

Table 1. Characteristics of Respondents

Characteristics of Respondents	N	%
Age		
<15	-	-
15-66	109	100
>65	-	-
Sex		
Male	33	30,3
Female	76	69,7
Latest Level of Education		
SD	7	6,4
SMP	9	8,3
SMA	56	51,4
D3	5	4,6
S1	32	29,3
Occupation		
Worked	44	40,4
Not work	65	59,6
Residential Area		
In Jakarta	76	69,7
Outside Jakarta	33	30,3

Table 2. Average level of importance and performance and service quality score

No	Item	Performance (P)	Importance (I)	Skor (S) P-I
Tangible				
1	Negative pressure room comfort	3.68	3.83	-0.15
2	Waiting room cleanliness	3.48	3.58	-0.1
3	Operator abilities and skills when carrying out maintenance	3.7	3.77	-0.07
4	Readiness of medical equipment and materials	3.61	3.78	-0.17
5	Cleanliness and neatness of the operator's appearance	3.61	3.69	-0.08
6	Cleanliness and neatness of the nurse's appearance	3.65	3.71	-0.06
7	Maintaining patient privacy	3.71	3.64	0.07
8	Technology and information media	3.48	3.56	-0.08
Responsiveness				
9	Operator speed in responding to complaints	3.6	3.72	-0.12
10	The operator's prompt and prompt attitude	3.6	3.68	-0.08
11	The nurse's alert and immediate attitude	3.56	3.6	-0.04
12	Room operator service who is always willing to help	3.62	3.72	-0.1
13	Room nurse service who is always willing to help	3.61	3.73	-0.12
Reliability				
14	Services provided by the operator before maintenance	3.61	3.63	-0.02
15	Patient admission procedures	3.6	3.63	-0.03
16	Timeliness of waiting before treatment	3.44	3.69	-0.25
17	Service procedures when maintenance is carried out	3.56	3.68	-0.12
18	Operators help provide	3.63	3.69	-0.06

solutions to complaints

Assurance				
19	Operator communication before maintenance is carried out	3.56	3.63	-0.07
20	Operator communication during maintenance	3.57	3.66	-0.09
21	Operator communication ability to follow directions	3.61	3.73	-0.12
22	Operators have sufficient knowledge	3.6	3.77	-0.17
Empathy				
23	Operator friendliness and politeness	3.74	3.82	-0.08
24	Nurse's friendliness and politeness	3.64	3.78	-0.14
25	Operators provide services without discrimination	3.71	3.79	-0.08
26	Nurses provide services without discrimination	3.65	3.75	-0.1
27	Operator performance in providing attention/empathy	3.65	3.76	-0.11
28	Operator performance is serious about serving patients	3.67	3.77	-0.1
29	Operators understand every patient's needs	3.57	3.61	-0.04
30	Nurses understand every patient's needs	3.56	3.6	-0.04
Average		3.61	3.7	-0.09

The following are the steps to get the average value in making a Cartesius diagram:

1. Calculate the average value in each question item's performance and importance groups to get the x (performance) and y (importance) values to determine the points to be included in the Cartesius diagram.
2. Calculate the average level of performance and average overall importance to get the intersection point on the performance and importance axes that divide the 4 quadrants.

3. Assign the points at all performance levels and importance to each question item into quadrants. From this value, the comparison between importance and performance is based on the formula Score (S) = P-I, which means performance minus importance, which is -0.09. A negative value means the service is not satisfied. The stages and results of IPA (Important – Performance Analysis) are shown as an IPA table and diagram. The table used was as shown in table 2.

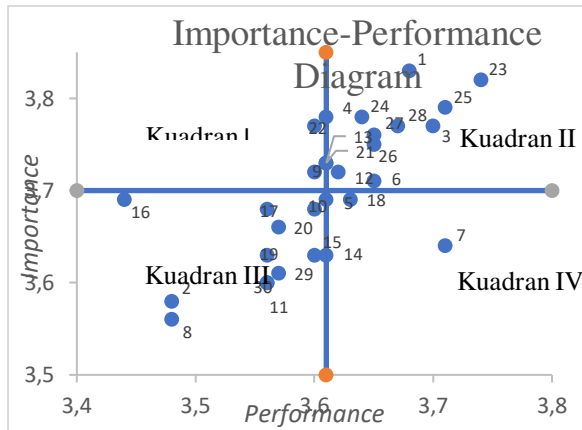


Figure 1. Importance-Performance Diagram

Determination of the Cartesius diagram and determination of the importance and performance of each question is shown in figure 1. The diagram consists of four quadrants; quadrant I is of high importance but low performance so it needs to be paid attention to, corrected, and improved, so that it can become a recommendation/suggestion that can be given to the dental hospital. Quadrant II must be maintained because of the level of importance and performance high; quadrant III has a low level of importance and performance so the priority is low; and quadrant IV has a low level of importance with high performance and is considered too excessive.

Based on the diagram above, in quadrant I there are 4 questions: question 9, 13, 21, and 22. Quadrant II consists of question number 1, 3, 4, 6, 12, 23, 24, 25, 26, 27, and 28. In quadrant III, there are 13 questions: numbers 2, 5, 8, 10, 11, 14, 15, 16, 17, 19, 20, 29, and 30. In quadrant IV, there are 2 questions, numbers 7 and 18.

Based on data processing using the Importance Performance Analysis and Service Quality method, one question in quadrant I which should have a high level of importance and low level of performance was considered not optimal. Services included in quadrant I are questions number 9 (operator speed in responding to patient complaints), 13 (nurse service that is always willing to help patients), 21 (operator communication skills), and number 22 (operator has enough knowledge to answer patient questions).

DISCUSSION

This research consisted of 109 respondents who were patients in negative pressure rooms and non-negative pressure rooms of Dental Hospital RSGM-P FKG USAKTI who had received care and services from clinical graduate students and specialist program students of Faculty of Dentistry, Universitas Trisakti. Based on age group, it is known that all respondents are of productive age, 15-64 years (100%). The results of this study are in line with a study at the University of Muhammadiyah Malang Hospital, where the majority of respondents were aged 18-25 years (56%).¹⁵ It is known that this age is a productive age that is starting to realize the importance of maintaining dental and oral health and has a high level of hope high quality of life.¹⁶ Age may operate through physiological changes, as for instance in dental health, or through the mental growth and habits of the individual.¹⁷ Yulianti's research in 2013 stated that respondents of productive age made the most use of health services.¹⁸ Based on the gender of the respondents, in this study there were more female respondents (69.7%). This finding is in line with research at the University of Muhammadiyah Malang Hospital where there were more female patients (73%) than male patients (27%).¹⁵ It is considered that women have more awareness of maintaining dental and oral health compared to man.¹⁹⁻²⁰

Based on the latest level of education, the majority of respondents were high school graduates (51.4%). This study is in line with research at the PKU Muhammadiyah Bantul Hospital.²¹ Patients who are high school graduates may be more educated, pay attention, and understand the importance of maintaining health. A person's education can influence their awareness of the importance of health.²² The educational level had a direct influence on both patient's knowledge and behavior regarding to the main oral health.²³ Based on occupation, there were 65 respondents (59.6%) who are unemployed. The same trend was shown in other study that was carried out in hospitals in 7 provinces in Indonesia.²⁴ The results of the research analysis showed a relation between dental health and work.²⁵ This is possible because there are quite a lot of patients who are students and housewives. Based on residential area, there were more respondents in Jakarta with 76 people (69.7%) compared to respondents who were outside Jakarta with 33 people (30.3%). The location of the dental hospital may facilitate easier and better health care to the people, which improves access to care.²⁶⁻²⁷

Based on the Cartesius diagram, 4 question items on responsiveness are included in quadrant I. The question is regarding the operator's speed in responding to patient complaints. Patient complaints require a proper diagnosis before carrying out treatment procedures.²⁸ The patient was dissatisfied because the patient felt that the operator was still not

fast enough carrying out treatment procedures. In this case, the operators were in the learning and education stage which needs more guidance in carrying out the dental procedures step by step. This question item emphasizes the speed and attention of the operators involved in responding to patient questions, requests, and complaints. The points in this dimension are the alertness of operators in serving patients and handling complaints felt by patients.²⁹ According to research at another hospital in Indonesia, it is known that the speed and accuracy of doctors in determining disease diagnoses is included in quadrant I, which is in line with research in negative pressure rooms at RSGM- P FKG USAKTI.³⁰

Question number 13 (responsiveness) concerns about nurse services who are always willing to help patients. Patients are considered less satisfied due to the lack of availability of nurses, especially on busy hours, so nurses are less focused on patients which can affect the quality of service. This relates to the responsiveness of nurses to immediately come to serve when patients need help and offer assistance or ask about the patient's condition without being asked. Nurses are considered less responsive when providing services to patients so improvements need to be made so that patients feel satisfied.³¹ According to research at Pariaman Hospital by Thabrani, et al., health workers respond immediately when needed by patients including quadrant I, which is in line with the results of research in the negative pressure room RSGM-P FKG USAKTI.³²

Question number 21 (assurance) concerns the operator's communication skills in motivating patients. Patients feel dissatisfied because the operator's communication is considered to be less effective, indicating the need for communication training for operators to improve the quality of the service. One of the basics of communication is what motivates someone to communicate with other individuals.³³ Effective communication skills are a tool to achieve a helping-healing relationship between patients and operators. Good communication services will influence the sustainability of the hospital because patients are satisfied with the given service.³¹ According to research at the Cisaat Health Center, Sukabumi Regency, the ability of doctors and nurses to communicate with patients is not included in quadrant I, where the results of this research are different from the results of research in negative pressure room RSGM-P FKG USAKTI.³⁴

Question number 22 (assurance) refers to sufficient knowledge of the operators. Patients feel dissatisfied because there are still unanswered questions during the course of the treatment. In this case, the operator is still in the learning and education stage, so the operator should learn more and master the knowledge related to the care for the patient.³⁵ Patient satisfaction with the services

provided can be determined through the operator's ability to generate a sense of confidence and trust in the patient without hesitation in terms of knowledge. Patients will feel satisfied with hospital services if the operators are trained and have good knowledge. Operators need to assure patients to create a sense of trust between patients in operators and hospitals.³⁶ The operator needs to have adequate knowledge.³⁷ Research at the Cisaat Health Center, Sukabumi Regency, shows that the staff's knowledge of patient illnesses is not included in quadrant I, where the research results at the Community Health Center are different from the research results in the negative pressure room at RSGM-P FKG USAKTI.³⁴

Based on quadrant II, there are 11 question items, regarding the comfort of the negative pressure room, the ability and skills of the operator, the readiness of medical equipment and materials, the cleanliness and tidiness of the nurse's appearance (tangible), the service of the room operator who is always willing to help (responsiveness), the friendliness and politeness of the operator and nurses, operators and nurses provide services without discrimination, the operator's performance is in providing attention/empathy, and the operator's performance is sincere (empathy). According to research at the Cisaat Community Health Center, Sukabumi Regency, it shows that the comfort of the examination room and the ability of health workers to provide service and patient care are included in quadrant II.³⁴ According to research on Importance-Performance Analysis in measuring patient satisfaction at a Community Health Center by Purwanto and Sugiarto, it is known that in terms of the appearance of a doctor or nurse is included in quadrant II. These are in line with research in the negative pressure room at RSGM-P FKG USAKTI, where patients felt satisfied with the service because of the high level of importance and performance.³⁸ A systematic treatment plan must be created to achieve functional and aesthetics that match the patient's expectations to achieve satisfactory results.³⁹

Based on quadrant III, there are 13 question items, questions regarding the cleanliness of the waiting room, the cleanliness and tidiness of the operator's appearance, technology and information media (tangible), the alert and immediate attitude of the operator and nurses (responsiveness), the service provided by the operator before treatment, procedures patient acceptance, timeliness of waiting before treatment, service procedures during treatment (reliability), operator communication before and during treatment (assurance), and operators and nurses understanding each patient's needs (empathy). Research analyzing satisfaction with service quality using Importance-Performance Analysis for outpatients at "X" Hospital in Sidoarjo by Yudityawati, et. al. shows that cleanliness in the

waiting room, neat appearance of operators and nurses, technology, and information media facilities such as wifi and television, as well as operator communication with patients are included in quadrant III, which is in line with research in negative pressure rooms at RSGM-P FKG USAKTI that is a low priority because of low importance and performance.⁴⁰

Based on quadrant IV, there are 2 question items, regarding maintaining patient privacy (tangible) and operators helping to provide solutions to patient complaints (reliability). Operator must be able to differentiate the etiology of patient complaints so that optimal treatment can be provided.⁴¹ Research analyzing the level of patient satisfaction with services provided by a hospital using the Service Quality and Importance-Performance Analysis method by Subiyantoro and Ambarwati shows that maintaining the security of patients' privacy regarding health services and operators helps in providing solutions to patients complaints are not included in quadrant IV. This is different from the results of research in the negative pressure room RSGM-P FKG USAKTI.⁴²

The limitation of this research is that some respondents who had filled out informed consent did not fill out the questionnaire completely so the data results were inaccurate and could not be used as research respondents. It is hoped that researchers can observe and seek more information regarding patient satisfaction in academic clinics, especially the negative pressure rooms. In previous research, a patient satisfaction survey using a modified patient satisfaction questionnaire from the Patient Satisfaction Questionnaire-18 (PSQ-18) with 107 respondents at the RSGM-P FKG USAKTI academic clinic showed that patients were satisfied with the medical care they received (92%). Based on the SWOT Matrix, it also stated that the level of patient satisfaction is a good strength factor.⁴³ It showed different result from the current study where researchers used the Service Quality (Servqual) and Importance-Performance Analysis (IPA) methods that enable identification of required service improvement.

CONCLUSION

Based on the this study, patients felt satisfied with the services in the negative pressure room and non negative pressure room of dental hospital RSGM-P FKG Universitas Trisakti with an average performance score of 3.61 and importance of 3.7. There is an indication of improvement need in the quality of the responsiveness and assurance dimensions in quadrant I.

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CONFLICT OF INTEREST

There are no conflicts of interest.

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