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FACTORS INFLUENCING PATIENT SATISFACTION IN INPATIENT DEPARTMENT OF A PRIVATE HOSPITAL IN SOUTH SUMATRA

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ABSTRACT

This study investigates the factors influencing patient satisfaction in the inpatient department of a private hospital in South Sumatra. Focusing on three key variables (nursing ratios, burnout, and interpersonal communication skills) this research explores their direct and mediated effects on patient satisfaction, with service quality serving as a mediating variable. The study employs a quantitative research method, utilizing a cross-sectional survey design. Data were collected from nurses working in the inpatient ward, with statistical analyses performed to identify relationships between the variables. The findings reveal significant correlations: higher nursing ratios and burnout negatively impact service quality and patient satisfaction, while effective interpersonal communication skills positively influence these outcomes. Service quality is shown to mediate the relationship between the independent variables and patient satisfaction, underscoring its critical role in healthcare delivery. These results provide actionable insights for hospital administrators, emphasizing the need to optimize staffing levels, address nurse burnout, and enhance communication skills to improve patient satisfaction. This research contributes to the academic understanding of patient satisfaction determinants in the context of Indonesian private healthcare and offers practical implications for improving hospital management and patient care strategies. The study highlights the importance of tailored interventions to address the unique challenges faced by private hospitals in South Sumatra.

KEYWORDS *Nursing Ratio, Burnout, Interpersonal Communication Skills, Service Quality, Patient Satisfaction*

INTRODUCTION

The private healthcare sector in Indonesia has been expanding rapidly over the past few decades, driven by increasing demand for specialized and higher-quality healthcare services (Khan et al., 2023; Mahendradhata, 2019; Suryanto et al., 2016; Suwantika et al., 2023). South Sumatra, with its mix of urban and rural populations, presents a unique landscape for the operation of private hospitals. Private hospitals in this region are often seen as providing an alternative to the overcrowded and resource-constrained public healthcare facilities. As a result, they attract a diverse patient population that includes both affluent urban residents and individuals from rural areas seeking better healthcare services (Ganle et al., 2016; Lüdemann et al., 2024; Surji & Sourchi, 2020). This diverse patient demographic presents unique challenges for private hospitals. Patients come with varying expectations and demands, shaped by factors such as socioeconomic status, cultural values, and previous experiences with healthcare services. Therefore, private hospitals must carefully understand these diverse factors that influence patient satisfaction to tailor their services effectively.

Patient satisfaction in healthcare settings is a multidimensional concept, influenced by various factors that range from clinical care quality to non-clinical aspects like hospital environment and administrative processes. It is widely recognized that satisfied patients are more likely to comply with medical advice, adhere to treatment plans, and maintain long-term relationships with healthcare providers. Moreover, patient satisfaction is often linked to better

health outcomes, as patients who feel valued and understood are more likely to take active roles in managing their health.

For private hospitals in South Sumatra, ensuring patient satisfaction is not only important for maintaining a competitive advantage but also for fulfilling the ethical responsibility of delivering high-quality healthcare. Patient satisfaction is an integral component of quality care and a key performance indicator for hospital management (Alitonang, 2020; Chen et al., 2022; Liu et al., 2021). In many countries, including Indonesia, patient satisfaction surveys are used as part of hospital accreditation processes, reflecting its significance as a measure of healthcare quality (Batalden et al., 2016; O'callaghan O.; Reid N., 2018; Okayama & al., 2022; Teshome et al., 2021; Zhou et al., 2017) . In various parts of the world, there are some differences in patient satisfaction in private and public hospitals. In Ethiopia, patient satisfaction was higher in private health facilities (66.7%) compared to public health facilities (40.1%). In Bangladesh, patients attending the private facilities had the highest level of satisfaction (73%), and patients attending the primary care facilities had the lowest level of satisfaction (52%). In England, Pérotin et al. (2013) found no difference in patient satisfaction between public and private hospitals. However, in the United States, it was found that patient satisfaction was higher in public hospitals with higher HCAHPS surveys.

A comprehensive review of the literature suggests that patient satisfaction in inpatient care is influenced by a wide range of factors. These factors can generally be categorized into nursing ratios, burnout, interpersonal communication skills, and service quality. Nursing ratios and burnout are deeply intertwined, with each exacerbating the other. High patient loads can lead to nurse burnout, while burnout itself can contribute to lower job performance, absenteeism, and ultimately, poor patient outcomes (Buckley et al., 2020; Chowdhury et al., 2023; Guo et al., 2018; Khatatbeh et al., 2022; Schlak et al., 2021). The most direct determinant of patient satisfaction is the quality of service received. This includes the technical competence of healthcare providers, the accuracy of diagnoses, and the effectiveness of treatments. Patients expect high standards of medical care, which encompasses not only the skills of doctors and nurses but also the timely administration of treatments and medications. In private hospitals, where patients often pay a premium for services, the expectations for clinical care quality are particularly high. The interactions between patients and healthcare providers (doctors, nurses, and other hospital staff) play a significant role in determining patient satisfaction. Communication, empathy, and the ability of healthcare providers to build trust are critical components of this interpersonal aspect. Patients who feel listened to, respected, and involved in their care decisions are more likely to report high levels of satisfaction.

Patient satisfaction is a critical measure of healthcare quality that influences patient outcomes and hospital performance. In the context of private hospitals in South Sumatra, where patients have diverse needs and expectations, understanding the factors that influence satisfaction is essential for delivering high-quality, patient-centered care. This study seeks to identify these factors, providing valuable insights for both academics and healthcare practitioners. Moreover, there has been no similar research conducted in the South Sumatra region.

This study offers a novel contribution by being one of the first to examine the combined effects of nursing ratios, burnout, and interpersonal communication on service quality and patient satisfaction in private hospitals in South Sumatra. Unlike prior research in other contexts, it provides localized insights into a diverse patient population and integrates clinical and non-clinical factors within a single model. The study fills a regional research gap and offers practical implications for improving healthcare quality in Indonesia's private sector.

Research Objective

Relationship between nursing ratios and service quality, Relationship between burnout and service quality, Relationship between interpersonal communication skills and service quality, Relationship between service quality and patient satisfaction, Relationship between nursing ratios and patient satisfaction, Relationship between burnout and patient satisfaction, and Relationship between interpersonal communication skills and patient satisfaction.

Benefits of Research

Theoretical and Academic Benefits

There are several theoretical and academic benefits, including contributions to existing knowledge, the development of theoretical frameworks, and cross-cultural relevance for the theoretical benefit itself. This research will expand the body of knowledge related to patient satisfaction in healthcare, particularly in the context of private hospitals in Indonesia, where local factors may differ from other regions. The study can help refine or develop models of patient satisfaction by identifying key factors that are relevant to the South Sumatra context. Findings can also provide a basis for comparing patient satisfaction factors between different cultural and regional contexts, thus enriching global theories on patient care and satisfaction.

Research foundation for future studies, methodological contributions, interdisciplinary relevance, and policy recommendations are the academic benefits of this research. This research could serve as a foundation for future academic work on healthcare quality, patient satisfaction, or hospital management in Indonesia and beyond. The research could also introduce or validate specific methodologies tailored to measuring patient satisfaction in private healthcare settings. The findings could be valuable for multiple academic fields, including healthcare management, public health, psychology, and sociology, as it deals with human behavior and organizational management. Academics studying public health policies could use this study to recommend strategies for improving patient satisfaction, not only in South Sumatra but also in similar healthcare environments.

Previous research has examined the factors influencing nurse burnout and patient satisfaction in hospitals. A study by Gutsan et al. (2018) found that the nurse-to-patient ratio directly determines the psychological, mental, and emotional effects on nurses, ultimately impacting their productivity and the overall health of patients. Furthermore, research by Guo et al. (2018) demonstrated a significant negative relationship between burnout and resilience among nurses, indicating that resilience plays a crucial role in influencing burnout levels. Meanwhile, Alghamdi (2014) investigated the impact of service quality on patient satisfaction in government hospitals in Southern Saudi Arabia. The findings revealed that healthcare service quality, particularly the *empathy* dimension, had the greatest influence on patient satisfaction. Therefore, government hospitals are encouraged to provide interpersonal skills training for doctors to enhance doctor-patient relationships.

For the practical benefits itself, these include improving hospital management, enhancing patient care, strategic decision-making, competitive advantage, and policy formulation. The research may provide hospital administrators and healthcare providers with actionable insights into factors that significantly impact patient satisfaction. This can help private hospitals in South Sumatra enhance their services. Identifying key areas that influence patient satisfaction can help hospitals prioritize resources and training to improve patient experiences. Hospital managers could use the findings to design better policies and strategies that focus on patient-centered care, potentially leading to higher patient retention and improved reputation. For private hospitals, understanding what drives patient satisfaction can offer a competitive edge in attracting more patients, as higher satisfaction often correlates with patient loyalty. The study

can inform local healthcare policies or hospital standards, especially in private healthcare sectors, contributing to improved regulatory frameworks that prioritize patient satisfaction.

RESEARCH METHOD

Previous research has examined the factors influencing nurse burnout and patient satisfaction in hospitals. A study by Gutsan et al. (2018) found that the nurse-to-patient ratio directly determines the psychological, mental, and emotional effects on nurses, ultimately impacting their productivity and the overall health of patients. Furthermore, research by Guo et al. (2018) demonstrated a significant negative relationship between burnout and resilience among nurses, indicating that resilience plays a crucial role in influencing burnout levels. Meanwhile, Alghamdi (2014) investigated the impact of service quality on patient satisfaction in government hospitals in Southern Saudi Arabia. The findings revealed that healthcare service quality, particularly the *empathy* dimension, had the greatest influence on patient satisfaction. Therefore, government hospitals are encouraged to provide interpersonal skills training for doctors to enhance doctor-patient relationships.

RESULT AND DISCUSSION

A total of 100 nurses from the inpatient ward of a private hospital in South Sumatra, along with patients from the same ward, participated as respondents in this study. The analysis begins with an overview of respondent profiles, followed by a descriptive analysis and hypothesis testing conducted on the sample group. Additionally, the discussion includes the results of the model analysis using PLS-SEM statistical processing.

Respondent Profile

With a total of 100 respondents for each nurse and patient, the age, gender and marital status profiles were obtained. With an abnormal data distribution, the median, minimum and maximum values of the age characteristics of nurses and patients were 28 (22 - 45) years and 36 (21 - 71) years respectively. In both groups, the majority were women with 98% and 65% for nurses and patients respectively. In terms of marital status in nurses, there was a slight difference between those who were married and single with 51% and 48% respectively and only 1% of nurses were divorced. In patients, it was found that the majority were married as much as 86% and only 14% were single.

Table 1. Respondent Profile Characteristic

	Nurse (%)	Patient (%)
Age*	28 (22 - 45)	36 (21 - 71)
Gender		
Male	2 (2.00)	35 (35.00)
Female	98 (98.00)	65 (65.00)
Marital Status		
Single	51 (51.00)	14 (14.00)
Married	48 (48.00)	86 (86.00)
Divorce	1 (1.00)	0 (0)

	Nurse (%)	Patient (%)
Total	100 (100.00)	100 (100.00)

*Values are Median (Min. - Max.);

Descriptive Statistical Analysis

Data testing for this study was carried out on 100 respondents collected in December 2024. The descriptive analysis of latent variables or constructs involved calculating the mean, standard deviation, and minimum-maximum values. The mean represents a measure of central tendency, providing insight into the average response for each questionnaire item (indicator) within a variable, based on all respondents' answers. The standard deviation (SD) reflects the data distribution, showing the variability or spread of responses for each question item representing an indicator. The minimum and maximum values indicate the lowest and highest ratings given by respondents for an indicator.

This study employed several variations of Likert scales, which are ordinal in nature. After data collection using the Likert scale, a calculation formula was applied to determine the scale range. This helped categorize the average values into appropriate categories based on the scale's range. The following is the calculation formula.

$$\text{Interval Range Scale} = \frac{Maximum\ Value - Minimum\ Value}{Number\ of\ Criteria\ in\ Statement}$$

Descriptive Statistics of Nursing Ratios

The following are the results of descriptive analysis of the Nursing Ratios variable, the measurement was carried out by interviewing the head nurse who was then answered verbally and given detailed data in numerical form. The following are the results of descriptive analysis of the Nursing Ratios variable.

Table 2. Descriptive Analysis of the Nursing Ratios

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
Nursing Ratios	8.11	1.67	8	6	10

Source: primary data (2024)

Conclusions describe the answers to the hypotheses and/or research objectives or scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypotheses. If necessary, at the end of the conclusion can also be written things that will be done related to the next idea of the research

Descriptive Statistics of Burnout

The following are the results of the descriptive analysis of the Burnout variable, the measurement was carried out using 22 indicators in the form of statements in the questionnaire, which were then answered by the Respondents using a Likert scale. The following are the results of the Interval Range Scale calculation for the Likert scale used in the Burnout variable and a descriptive analysis of the 22 indicators of the Burnout variable.

Interval Range Scale = $\frac{6-0}{7} = 0.85$

Table 3. Descriptive Statistics Scale for Burnout

Scale	Category
1.00 - 1.85	Never
1.86 - 2.70	A few times per year
2.71 - 3.55	Once a month
3.56 - 4.40	A few times per month
4.41 - 5.25	Once a week
5.26 - 6.10	A few times per week
6.11 - 7.00	Every day

Source: primary data (2024)

Conclusions describe the answers to the hypotheses and/or research objectives or scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypotheses. If necessary, at the end of the conclusion can also be written things that will be done related to the next idea of the research.

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Descriptive Statistics of Interpersonal Communication Skills

The following are the results of the descriptive analysis of the Interpersonal Communication Skills variable, the measurement was carried out using 22 indicators in the form of statements in the questionnaire, which were then answered by the Respondents using a Likert scale. The following are the results of the Interval Range Scale calculation for the Likert scale used in the Burnout variable and a descriptive analysis of the 22 indicators of the Interpersonal Communication Skills variable.

$$\text{Interval Range Scale} = \frac{5-1}{} = 0.80$$

Table 4. Descriptive Statistics Scale for Interpersonal Communication Skills

Scale	Category
1.00 - 1.80	Not done
1.81 - 2.60	A little done
2.61 - 3.40	A fair amount done
3.41 - 4.20	Done
4.21 - 5.00	Perfectly done

Source: primary data (2024)

Conclusions describe the answers to the hypotheses and/or research objectives or scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypotheses. If necessary, at the end of the conclusion can also be written things that will be done related to

the next idea.

Table 5. Descriptive Analysis of the Interpersonal Communication Skills

Item	Statement	Mean	SD	Category
ICS1	Greeted warmly and showed interest	4.33	0.58	Perfectly done
ICS2	Introduce himself or herself	4.12	1.01	Done
ICS3	Posture and Gesture of the provider showed care and concern	4.36	1.45	Perfectly done
ICS4	Maintained eye contact appropriately when talking with the client	4.49	0.56	Perfectly done
ICS5	Used facial expressions	4.40	0.54	Perfectly done
ICS6	Conducted small talk and creating a friendly environment	4.48	0.46	Perfectly done
ICS7	Used appropriate vocal tone and volume, pace for situations	4.52	0.56	Perfectly done
ICS8	Used words that show care and concern throughout the interview	4.02	1.13	Done
ICS9	Explained using words/ terms that are easy for the patient to understand	4.43	0.52	Perfectly done
ICS10	Used short sentences instead of long sentences	4.53	0.51	Perfectly done
ICS11	Clarity of the questions asked	4.39	0.63	Perfectly done
ICS12	Open ended vs. close ended questions	4.45	0.56	Perfectly done
ICS13	Clarified details as necessary with more specific closed ended questions	4.35	0.55	Perfectly done
ICS14	Moved effectively to additional questions	4.25	0.68	Perfectly done
ICS15	Used empathy to build relationship with the client	4.44	0.54	Perfectly done
ICS16	Did not interrupt the client when the client was talking	4.36	0.48	Perfectly done
ICS17	Listened effectively to client's responses.	4.55	0.52	Perfectly done
ICS18	Responded explicitly to the client statements about ideas, feelings, and values	4.51	0.53	Perfectly done
ICS19	Summarized what was discussed	4.57	0.45	Perfectly done
ICS20	Assessed client's understanding of the problem	4.47	0.52	Perfectly done
ICS21	Provided time for the client to ask questions	4.45	0.55	Perfectly done
ICS22	Acknowledged the client and closed the conversation	4.35	0.47	Perfectly done

Source: primary data (2024)

Conclusions describe the answers to the hypotheses and/or research objectives or scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypotheses. If necessary, at the end of the conclusion can also be written things that will be done related to the next idea of the research.

Descriptive Statistics of Service Quality

The following are the results of the descriptive analysis of the Service Quality variable, the measurement was carried out using 44 indicators in the form of statements in the questionnaire, which were then answered by the Respondents using a Likert scale. The following are the results of the Interval Range Scale calculation for the Likert scale used in the Burnout variable and a descriptive analysis of the 44 indicators of the Service Quality variable

$$\textbf{Interval Range Scale} = \frac{7-1}{} = \textbf{0.85}$$

Conclusions describe the answers to the hypotheses and/or research objectives or scientific findings obtained. The conclusion does not contain a repetition of the results and discussion, but rather a summary of the findings as expected in the objectives or hypotheses. If necessary, at the end of the conclusion can also be written things that will be done related to the next idea of the research.

Table 6. Descriptive Analysis of the Service Quality

Scale	Category
1.00 - 1.85	Not at all/No
1.86 - 2.70	Not looking forward to/very inconsistent
2.71 - 3.55	Do not expect/inconsistent
3.56 - 4.40	Fine/unclear
4.41 - 5.25	Hope/match
5.26 - 6.10	Expect/exactly
6.11 - 7.00	Looking forward to/exceed expectations

Source: primary data (2024)

Table 7. Descriptive Analysis of the Interpersonal Communication Skills

Item	Statement	Mean	SD	Category
SQ1	Hospital will have modern looking equipment	6.01	1.51	Expect/exactly
SQ2	The physical facilities at Hospital will be visually appealing	5.97	1.56	Expect/exactly
SQ3	Nurses at Hospital will be neat appearing	6.07	1.57	Expect/exactly
SQ4	Materials associated with the service (such as welcome, no smoking statements) will be visually appealing at Hospital	6.10	1.52	Expect/exactly
SQ5	Hospital has modern looking equipment	6.11	1.54	Looking forward to/exceed expectations
SQ6	Hospital's physical facilities are visually appealing	6.06	1.59	Expect/exactly
SQ7	Hospital's nurses are neat appearing	6.08	1.52	Expect/exactly
SQ8	Materials associated with the service (such as welcome, no smoking statements) are visually appealing at Hospital	6.05	1.57	Expect/exactly
SQ9	When Hospital promise to do something by a certain time, they do	5.67	1.68	Expect/exactly
SQ10	When a customer has a problem,Hospital will show a sincere interest in solving it	5.75	1.61	Expect/exactly
SQ11	Hospital will perform the service right the first time	5.82	1.59	Expect/exactly
SQ12	Hospital will provide the service at the time they promise to do so	5.78	1.59	Expect/exactly
SQ13	Hospital will insist on error free records	5.82	1.62	Expect/exactly
SQ14	When Hospital promises to do something by a certain time, it does so	5.80	1.61	Expect/exactly
SQ15	When you have a problem, Hospital shows a sincere interest in solving it	5.78	1.61	Expect/exactly
SQ16	Hospital performs the service right the first time	5.77	1.66	Expect/exactly
SQ17	Hospital provides its service at the time it promises to do so	5.80	1.61	Expect/exactly
SQ18	Hospital insists on error free records	5.79	1.62	Expect/exactly

Item	Statement	Mean	SD	Category
SQ19	Nurses in Hospital will tell patient exactly when services will be performed	5.69	1.69	Expect/exactly
SQ20	Nurses in Hospital will give prompt service to patient	5.74	1.68	Expect/exactly
SQ21	Nurses in Hospital will always be willing to help patient	5.82	1.65	Expect/exactly
SQ22	Nurses in Hospital will never be too busy to respond to patient' requests	5.71	1.67	Expect/exactly
SQ23	Nurses in Hospital tell you exactly when services will be performed	5.88	1.57	Expect/exactly
SQ24	Nurses in Hospital give you prompt service	5.94	1.56	Expect/exactly
SQ25	Nurses in Hospital are always willing to help you	5.94	1.56	Expect/exactly
SQ26	Nurses in Hospital are never too busy to respond to your request	5.84	1.60	Expect/exactly
SQ27	The behavior of nurses in Hospital will instill confidence in patient	5.92	1.59	Expect/exactly
SQ28	Patient Hospital will feel safe in transactions	5.92	1.57	Expect/exactly
SQ29	Nurses in Hospital will be consistently courteous with patient	5.97	1.57	Expect/exactly
SQ30	Nurses in Hospital will have the knowledge to answer patient' questions	5.94	1.57	Expect/exactly
SQ31	The behavior of nurses in Hospital instills confidence in you	5.75	1.67	Expect/exactly
SQ32	You feel safe in your transactions with Hospital	5.79	1.64	Expect/exactly
SQ33	Nurses in Hospital area consistently courteous with you	5.82	1.63	Expect/exactly
SQ34	Nurses in Hospital have the knowledge to answer your questions	5.82	1.63	Expect/exactly
SQ35	Hospital will give patient individual attention	5.90	1.56	Expect/exactly
SQ36	Hospital will have operating hours convenient to all their patient	5.93	1.56	Expect/exactly
SQ37	Hospital have nurses who give patient personal attention	5.93	1.55	Expect/exactly
SQ38	Hospital will have their customer's best interests at heart	5.97	1.55	Expect/exactly
SQ39	The nurses of Hospital will understand the specific needs of their patient	5.96	1.55	Expect/exactly
SQ40	Hospital gives you individual attention	5.81	1.67	Expect/exactly
SQ41	Hospital has operating hours convenient to all its patient	5.85	1.66	Expect/exactly
SQ42	Hospital has nurses who give you personal attention	5.80	1.66	Expect/exactly
SQ43	Hospital has your best interest at heart	5.78	1.66	Expect/exactly
SQ44	The nurses of Hospital understand your specific needs	5.81	1.66	Expect/exactly

Source: primary data (2024); SD: Standard Deviation

Descriptive Statistics of Patient Satisfaction

The following are the results of the descriptive analysis of the Patient Satisfaction variable, the measurement was carried out using 7 indicators in the form of statements in the questionnaire, which were then answered by the Respondents using a Likert scale. The following are the results of the Interval Range Scale calculation for the Likert scale used in the Burnout variable and a descriptive analysis of the 7 indicators of the Burnout variable.

$$\text{Interval Range Scale} = \frac{4 - 0}{5} = 0.80$$

Conclusions describe the answers to the hypotheses and/or research objectives or sc.

Table 8. Descriptive Statistics Scale for Patient Satisfaction

Scale	Category
0 - 0.80	Strongly disagree / Very dissatisfied
0.81 - 1.60	Disagree / Dissatisfied
1.61 - 2.40	Not sure / Neither satisfied nor dissatisfied
2.41 - 3.20	Agree / Satisfied
3.21 - 4.00	Strongly agree / Very satisfied

Source: primary data (2024)

Table 9. Descriptive Analysis of the Patient Satisfaction

Item	Statement	Mean	SD	Category
PS1	How satisfied are you with the effect of your {treatment/care}?	3.48	0.35	Very satisfied
PS2	How satisfied are you with the explanations the {doctor/other health professional} has given you about the results of your {treatment/care}?	3.55	0.35	Very satisfied
PS3	The {doctor/other health professional} was very careful to check everything when examining you	3.54	0.35	Strongly agree
PS4	How satisfied were you with the choices you had in decisions affecting your health care?	3.54	0.35	Very satisfied
PS5	How much of the time did you feel respected by the {doctor/other health professional}?	3.66	0.43	Very satisfied
PS6	The time you had with the {doctor/other health professional} was too short	2.43	1.04	Agree
PS7	Are you satisfied with the care you received in the {hospital/clinic}??	3.55	0.35	Very satisfied

Source: primary data (2024); SD: Standard Deviation

Inferential Statistical Analysis

The Partial Least Square - Structural Equation Model (PLS-SEM) approach is used in the inferential data analysis of this study. The reliability and validity of each indicator in a model are tested through the outer model and the explanatory ability, model prediction and significance between variables are assessed through the inner model.

Outer Model (Measurement Model)

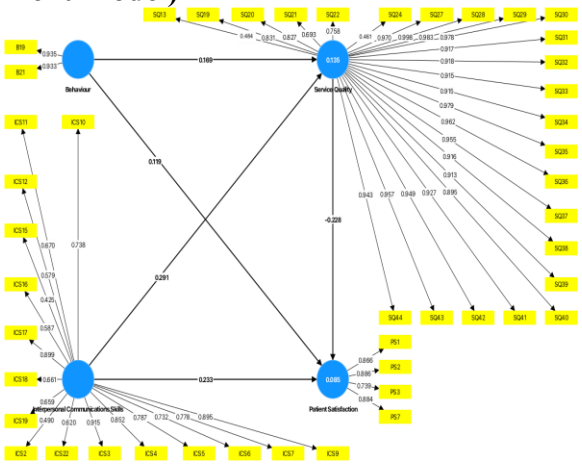

Figure 1. Outer Model

Source: SmartPLS 4.1.0.9 Data Processing Results (2024)

Validity and reliability testing on the outer model known as the measurement model is the first stage in data analysis using the PLS-SEM method.

Through this test, the ability of the reflective indicators used is valid and can measure latent variables or constructs well. SmartPLS 4.1.0.9 software was used to assess the outer model of this study.

Validity Testing

Of the five variables studied, it was found that there were variables that were not meaningful and not all indicators in one variable were valid in measuring the model construct in the outer model of this study. The Nursing Ratios variable was found to be not meaningful because the only indicator in the variable was not valid. There was a difference in the number of valid indicators in the remaining variables. In the Behavior variable, only 2 out of 22 indicators were valid, 16 out of 22 indicators were valid in the Interpersonal Communication Skills variable, 4 out of 7 indicators were valid in the Patient Satisfaction variable, and 24 out of 44 indicators were valid in the Service Quality variable. All indicators were declared valid with Loading Value >0.4 and Average Variance Extracted (AVE) >0.5 (Table 9).

Table 10. Validity Convergent

Variable	Indicator	Loading	AVE	Result
Interpersonal Communication Skills	ICS10	0.738	0.518	Valid
	ICS11	0.670		Valid
	ICS12	0.579		Valid
	ICS15	0.425		Valid
	ICS16	0.587		Valid
	ICS17	0.899		Valid
	ICS18	0.661		Valid
	ICS19	0.659		Valid
	ICS2	0.490		Valid
	ICS22	0.620		Valid
	ICS3	0.915		Valid
	ICS4	0.852		Valid
	ICS5	0.787		Valid
	ICS6	0.732		Valid
	ICS7	0.778		Valid
	ICS9	0.895		Valid
Service Quality	SQ28	0.998	0.875	Valid
	SQ29	0.983		Valid
	SQ30	0.978		Valid
	SQ31	0.917		Valid
	SQ32	0.918		Valid
	SQ33	0.915		Valid
	SQ34	0.915		Valid
	SQ35	0.979		Valid
	SQ36	0.962		Valid
	SQ37	0.955		Valid
	SQ38	0.916		Valid
	SQ39	0.913		Valid

	SQ40	0.895	Valid
	SQ41	0.927	Valid
	SQ42	0.949	Valid
	SQ43	0.957	Valid
	SQ44	0.943	Valid

Source: primary data (2024)

Q-square (Q2) Predictive Relevance with a Q2 value <0.25, it can be said that the model has small predictive relevance while the Q2 value of 0.25-0.5 has medium predictive relevance, and the Q2 value> 0.5 can be said that the model has large predictive relevance. In this study, it was found that both Service Quality and Patient Satisfaction variables have the ability to predict large relevance relationships.

Table 10. Q-square (Q^2) Predictive Relevance

Variable	Q^2	Result
Service Quality	0.513	Large Predictive Relevance
Patient Satisfaction	0.687	Large Predictive Relevance

Source: SmartPLS 4.1.0.9 Data Processing Results (2024)

CONCLUSION

There is no correlation between nursing ratios, service quality, and patient satisfaction (H1 and H3) because the Nursing Ratios variable is invalid. Burnout (H2 and H5) has a significant impact on both service quality and patient satisfaction, with a p-value <0.05. These findings support a negative relationship between burnout, service quality, and patient satisfaction, emphasizing the importance of efforts to improve the surrounding environment to enhance the quality of care, thus improving patient satisfaction. Interpersonal communication skills (H3 and H6) have a significant impact on service quality, with a p-value <0.05. The findings support a positive relationship between *interpersonal communication skill*, service quality, and patient satisfaction. Effective communication can foster better nurse-patient relationships, which in turn leads to improved quality of care and patient satisfaction. Service quality has a significant impact on patient satisfaction (H7) with a p-value <0.05. The finding supports a positive relationship between service quality and patient satisfaction. The positive correlation between service quality and patient satisfaction underscores the importance of delivering high-quality care to enhance patient experiences and outcomes.

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