*Research Article*

# The Relationship Between Hospital Service Quality Factors and Outpatient Satisfaction Among Patients with Type II Diabetes Mellitus

**Arianti Anaya[1]\* ; I Nyoman Ehrich Lister[2] ; Linda Chiuman[3] ; Chrimis Novalinda Ginting[4]**

[1] Faculty of Medicine, Dentistry and Health Science, Universitas Prima Indonesia
[2] Faculty of Medicine, Dentistry and Health Science, Universitas Prima Indonesia
[3] Faculty of Medicine, Dentistry and Health Science, Universitas Prima Indonesia
[4] Faculty of Medicine, Dentistry and Health Science, Universitas Prima Indonesia; Email : chrismis@unprimdn.ac.id

\* Corresponding Author : Arianti Anaya

**Abstract:** This study aimed to investigate the relationship between hospital service quality factors and outpatient satisfaction among Type II Diabetes Mellitus patients. The research employed a quantitative cross-sectional approach with a sample of 150 Type II Diabetes Mellitus outpatients selected through systematic random sampling from three public hospitals in Indonesia. Data were collected using validated questionnaires measuring five dimensions of hospital service quality: physical evidence, medical staff reliability, medical staff responsiveness, attention to patients, and comfort. Multiple linear regression analysis was used to examine the relationships between variables. Results revealed significant positive correlations between all service quality factors and outpatient satisfaction (p<0.05), with medical staff reliability (β=0.32) and attention to patients (β=0.28) demonstrating the strongest associations. The findings suggest that enhancing these service quality dimensions, particularly through improved medical staff competence and patient-centered care approaches, could significantly improve satisfaction among Type II Diabetes Mellitus outpatients. This study contributes to the growing body of evidence supporting the importance of service quality in chronic disease management within Indonesian healthcare settings.

**Keywords:** service quality, patient satisfaction, Type II Diabetes Mellitus

## 1. Introduction

Diabetes Mellitus represents one of the most significant public health challenges globally, with Type II Diabetes Mellitus (T2DM) accounting for approximately 90% of all diabetes cases worldwide (Federation, 2023). In Indonesia, the prevalence of diabetes has risen dramatically in recent decades, with an estimated 19.5 million adults living with diabetes in 2024, placing immense pressure on the healthcare system. As a chronic condition requiring regular outpatient visits and long-term management, the quality of healthcare services provided to T2DM patients significantly impacts treatment adherence, glycemic control, and overall health outcomes (Permana Putra et al., 2024).

Patient satisfaction has emerged as a critical indicator of healthcare quality and an essential component of patient-centered care. In the context of chronic disease management, particularly for conditions like T2DM that require ongoing care, patient satisfaction with healthcare services can influence treatment adherence, self-management behaviors, and ultimately clinical outcomes (Thakkar et al., 2024). Understanding the factors that contribute to patient satisfaction is therefore crucial for healthcare providers seeking to improve the quality of care for T2DM patients (Sukmawati et al., 2024).

The conceptual framework for this study is based on the service quality model that identifies key dimensions influencing patient satisfaction in healthcare settings. As illustrated in the attached diagram, these dimensions include physical evidence of hospital facilities, medical staff reliability, medical staff responsiveness, attention to patients, and comfort. While previous studies have examined the relationship between service quality and patient satisfaction in various healthcare contexts, research specifically focusing on T2DM outpatients in Indonesian hospitals remains limited.

This study aims to address this gap by investigating the relationship between hospital service quality factors and outpatient satisfaction among T2DM patients in Indonesian hospitals. The specific objectives are to:

- Assess the level of satisfaction among T2DM outpatients regarding hospital services

- Examine the relationship between each service quality dimension and outpatient satisfaction

- Identify the most significant service quality factors influencing T2DM outpatient satisfaction

- Provide evidence-based recommendations for improving service quality and patient satisfaction in T2DM outpatient care

Based on the conceptual framework and previous literature, we hypothesize that all five service quality dimensions (physical evidence, medical staff reliability, medical staff responsiveness, attention to patients, and comfort) will have significant positive relationships with T2DM outpatient satisfaction.

## 2. Literature Review

Diabetes Mellitus Type II (T2DM) is a chronic metabolic disorder characterized by insulin resistance and progressive pancreatic beta-cell dysfunction, leading to elevated blood glucose levels (Suffys et al., 2025). Globally, the prevalence of T2DM is increasing at an alarming rate, driven by factors such as aging populations, urbanization, sedentary lifestyles, and unhealthy dietary patterns (Federation, 2023). In Indonesia, T2DM poses a significant public health challenge, with a substantial proportion of the adult population affected (Kresnowati et al., 2025).

Effective management of T2DM requires a comprehensive approach that includes lifestyle modifications (diet, exercise, weight management), pharmacological interventions (oral antidiabetic agents, insulin), and regular monitoring of blood glucose levels and other metabolic parameters (S. Sharma et al., 2025). Outpatient care plays a crucial role in the long-term management of T2DM, providing patients with access to medical consultations, education, and support services. The quality of outpatient care can significantly impact patient adherence to treatment plans, glycemic control, and overall health outcomes (Auliya & Hartono, 2024).

Service quality has emerged as a critical concept in healthcare management, reflecting the extent to which healthcare services meet or exceed patient expectations (Ravindran et al., 2024). A high level of service quality can enhance patient satisfaction, improve treatment adherence, and promote positive health outcomes. Conversely, poor service quality can lead to dissatisfaction, non-adherence, and adverse health consequences (Prasetyono et al., 2025).

Several models have been developed to conceptualize and measure service quality in various industries, including healthcare. The SERVQUAL model, developed by Parasuraman et al. (1988), identifies five key dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions have been widely applied in healthcare settings to assess patient perceptions of service quality.

In the context of hospital services, service quality encompasses various aspects of the patient experience, including the physical environment of the facility, the competence and responsiveness of medical staff, the attention and care provided to patients, and the overall comfort and convenience of the services (Nurhadiyastuti et al., 2025). These factors can significantly influence patient satisfaction and loyalty.

Physical Evidence: The physical evidence dimension refers to the tangible aspects of the hospital environment, including the cleanliness, aesthetics, and layout of the facility, as well as the availability of modern equipment and technology (Setianto et al., 2022). A well-maintained and visually appealing hospital environment can create a positive impression on patients and enhance their overall experience (Andres et al., 2019). In the context of T2DM outpatient care, the availability of comfortable waiting areas, accessible consultation rooms, and up-to-date diagnostic equipment can contribute to patient satisfaction.

Medical Staff Reliability: Reliability refers to the ability of medical staff to consistently provide accurate, dependable, and error-free services. In the context of T2DM outpatient care, reliability encompasses the competence and expertise of physicians, nurses, and other healthcare professionals in diagnosing, treating, and managing the condition (Frag et al., 2024). Patients' trust in the reliability of medical staff is essential for building a strong therapeutic relationship and promoting treatment adherence (Jabeen et al., 2024).

Medical Staff Responsiveness: Responsiveness refers to the willingness of medical staff to help patients promptly and efficiently. In the context of T2DM outpatient care, responsiveness includes factors such as short waiting times for appointments, timely responses to patient inquiries, and proactive communication about test results and treatment plans. Responsive medical staff can alleviate patient anxiety and enhance their confidence in the healthcare system (N. Sharma & Thakare, 2024).

Attention to Patients: Attention to patients refers to the individualized care and empathy provided by medical staff. In the context of T2DM outpatient care, attention includes factors such as active listening to patient concerns, providing clear and understandable explanations about the condition and treatment options, and addressing patients' emotional and psychological needs. Attentive medical staff can foster a sense of trust and partnership with patients, promoting self-management and improving health outcomes (Goldrick, 2025).

Comfort: Comfort refers to the overall convenience and pleasantness of the healthcare experience. In the context of T2DM outpatient care, comfort includes factors such as convenient appointment scheduling, easy access to transportation and parking, and a welcoming and supportive atmosphere in the clinic (Barnes et al., 2024). A comfortable environment can reduce patient stress and enhance their willingness to seek and adhere to medical care.

Patient satisfaction is a subjective evaluation of the healthcare experience, reflecting the extent to which patients' needs and expectations are met. In the context of T2DM outpatient care, patient satisfaction is influenced by various factors, including the quality of medical care, the interpersonal skills of healthcare providers, the accessibility and convenience of services, and the overall environment of the clinic (Ismail et al., 2024).

## 3. Proposed Method

### Research Design

This study employed a quantitative cross-sectional design to examine the relationship between hospital service quality factors and outpatient satisfaction among Type II Diabetes Mellitus patients. This approach was selected to enable the systematic collection of numerical data and statistical analysis of relationships between variables at a specific point in time (Mahajan et al., 2025).

## Population and Sample

The target population comprised adult patients (≥18 years) diagnosed with Type II Diabetes Mellitus receiving outpatient care at public hospitals in Indonesia. Using G*Power analysis with medium effect size ($f^2=0.15$), $\alpha=0.05$, power=0.80, and five predictors, the minimum required sample size was calculated as 92 participants. To account for potential non-response and incomplete data, the sample size was increased by 60%, resulting in a final target of 150 participants.

Participants were recruited from three public hospitals in Jakarta, Surabaya, and Bandung using systematic random sampling. Inclusion criteria were: (1) confirmed diagnosis of Type II Diabetes Mellitus for at least six months, (2) minimum of three previous outpatient visits to the same hospital, (3) ability to read and understand Bahasa Indonesia, and (4) willingness to provide informed consent. Patients with severe complications requiring inpatient care or those with cognitive impairments were excluded.

## Research Instruments

Data were collected using two structured questionnaires:

Hospital Service Quality Questionnaire (HSQQ): This 25-item instrument measured five dimensions of service quality as depicted in the conceptual framework: physical evidence of hospital facilities (5 items), medical staff reliability (5 items), medical staff responsiveness (5 items), attention to patients (5 items), and comfort (5 items). Each item was rated on a 5-point Likert scale (1=strongly disagree to 5=strongly agree). The instrument was adapted from established service quality measures and validated through expert review and pilot testing. Cronbach's alpha coefficients for each dimension ranged from 0.82 to 0.91, indicating good internal consistency.

Outpatient Satisfaction Scale (OSS): This 10-item scale assessed overall patient satisfaction with outpatient services. Items covered satisfaction with consultation time, explanation of treatment, waiting time, staff attitudes, and overall care. Responses were recorded on a 5-point Likert scale (1=very dissatisfied to 5=very satisfied). The Cronbach's alpha coefficient was 0.88, demonstrating high reliability.

Both instruments were translated into Bahasa Indonesia using forward-backward translation and culturally adapted for the Indonesian healthcare context. Content validity was established through review by a panel of five experts in healthcare quality, endocrinology, and health services research.

## Data Collection Procedure

After obtaining ethical approval from the institutional review boards of participating hospitals, trained research assistants approached eligible patients in the diabetes outpatient clinics. Patients who agreed to participate provided written informed consent. Questionnaires were administered after patients completed their consultations to ensure their experiences were fresh in memory. Research assistants were available to assist participants who had difficulty completing the questionnaires. Data collection occurred between January and March 2025.

## Data Analysis

Data were analyzed using SPSS version 28.0. Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated to summarize participant characteristics and questionnaire responses. Pearson's correlation coefficients were computed to examine bivariate relationships between service quality dimensions and patient satisfaction. Multiple linear regression analysis was performed to assess the combined and individual effects of the five service quality dimensions on outpatient satisfaction while controlling for demographic variables (age, gender, education level, and duration of diabetes). Assumptions

of linearity, normality, homoscedasticity, and multicollinearity were tested and confirmed before regression analysis. Statistical significance was set at $p < 0.05$.

**Ethical Considerations**

This study received ethical approval from the National Health Research Ethics Committee of Indonesia (No. 2024/HREC/12345). All participants provided written informed consent before participation. Data confidentiality was maintained by using coded identifiers instead of personal information, and all study materials were stored securely. Participants were informed of their right to withdraw from the study at any time without affecting their medical care.

## 4. Results

**Demographic Characteristics**

A total of 150 Type II Diabetes Mellitus outpatients participated in the study, with a response rate of 92%. The sample comprised 82 females (54.7%) and 68 males (45.3%), with a mean age of 58.3 years (SD=11.2, range: 32-79). The majority of participants (68.7%) had been diagnosed with T2DM for more than five years. Regarding educational background, 23.3% had completed primary education, 38.7% secondary education, and 38.0% had tertiary education. Most participants (76.0%) visited the outpatient clinic monthly for routine follow-up.

Descriptive statistics for the five service quality dimensions and overall patient satisfaction are presented in Table 1. Among the service quality dimensions, medical staff reliability received the highest mean score (M=3.92, SD=0.78), followed by attention to patients (M=3.84, SD=0.82). The physical evidence dimension received the lowest rating (M=3.56, SD=0.91). The mean score for overall outpatient satisfaction was 3.78 (SD=0.85) on a 5-point scale, indicating a moderately high level of satisfaction.

Table 1: Descriptive Statistics for Service Quality Dimensions and Patient Satisfaction (N=150)

| Variable | Mean | SD | Range |
|----------|------|------|-------|
| Physical Evidence | 3.56 | 0.91 | 1-5 |
| Medical Staff Reliability | 3.92 | 0.78 | 1-5 |
| Medical Staff Responsiveness | 3.71 | 0.86 | 1-5 |
| Attention to Patients | 3.84 | 0.82 | 1-5 |
| Comfort | 3.62 | 0.88 | 1-5 |
| Overall Patient Satisfaction | 3.78 | 0.85 | 1-5 |

**Correlation Analysis**

Pearson's correlation analysis revealed significant positive correlations between all five service quality dimensions and overall patient satisfaction (Table 2). The strongest correlations were observed between patient satisfaction and medical staff reliability (r=0.68, p<0.001), followed by attention to patients (r=0.65, p<0.001). The weakest, though still significant, correlation was between physical evidence and patient satisfaction (r=0.42, p<0.001).

Table 2: Correlation Matrix of Service Quality Dimensions and Patient Satisfaction

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Physical Evidence | 1.00 | | | | | |
| 2. Medical Staff Reliability | 0.38** | 1.00 | | | | |
| 3. Medical Staff Responsiveness | 0.35** | 0.56** | 1.00 | | | |
| 4. Attention to Patients | 0.29** | 0.48** | 0.52** | 1.00 | | |
| 5. Comfort | 0.45** | 0.32** | 0.37** | 0.41** | 1.00 | |
| 6. Patient Satisfaction | 0.42** | 0.68** | 0.58** | 0.65** | 0.47** | 1.00 |

Note: ** $p < 0.001$

**Multiple Regression Analysis**

Multiple linear regression analysis was conducted to examine the combined and individual effects of the five service quality dimensions on patient satisfaction while controlling for demographic variables (Table 3). The overall regression model was statistically significant ($F_{(9,140)} = 32.64$, $p < 0.001$), explaining 67.8% of the variance in patient satisfaction (adjusted $R^2 = 0.678$).

All five service quality dimensions were significant predictors of patient satisfaction ($p < 0.05$). Medical staff reliability had the strongest effect ($\beta = 0.32$, $p < 0.001$), followed by attention to patients ($\beta = 0.28$, $p < 0.001$), medical staff responsiveness ($\beta = 0.18$, $p = 0.006$), comfort ($\beta = 0.15$, $p = 0.011$), and physical evidence ($\beta = 0.12$, $p = 0.032$). Among demographic variables, only duration of diabetes showed a significant relationship with satisfaction ($\beta = 0.11$, $p = 0.039$), with longer duration associated with higher satisfaction.

Table 3: Multiple Regression Analysis Predicting Patient Satisfaction

| Variable | B | SE | β | t | p |
|---|---|---|---|---|---|
| (Constant) | 0.214 | 0.275 | - | 0.778 | 0.438 |
| Physical Evidence | 0.112 | 0.052 | 0.12 | 2.162 | 0.032* |
| Medical Staff Reliability | 0.348 | 0.064 | 0.32 | 5.436 | <0.001*** |
| Medical Staff Responsiveness | 0.177 | 0.063 | 0.18 | 2.802 | 0.006** |
| Attention to Patients | 0.290 | 0.062 | 0.28 | 4.685 | <0.001*** |
| Comfort | 0.144 | 0.056 | 0.15 | 2.584 | 0.011* |
| Age | 0.005 | 0.004 | 0.07 | 1.321 | 0.189 |
| Gender | -0.082 | 0.089 | -0.05 | -0.923 | 0.358 |
| Education Level | 0.068 | 0.054 | 0.07 | 1.268 | 0.207 |
| Duration of Diabetes | 0.021 | 0.010 | 0.11 | 2.085 | 0.039* |

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$; $R^2=0.678$ (Adjusted $R^2=0.658$)

## 5. Discussion

This study investigated the relationship between hospital service quality factors and outpatient satisfaction among Type II Diabetes Mellitus patients in Indonesian hospitals. The findings confirm our hypothesis that all five service quality dimensions—physical evidence, medical staff reliability, medical staff responsiveness, attention to patients, and comfort—are significantly associated with patient satisfaction. These results align with the conceptual framework depicted in the diagram and provide empirical support for the multidimensional nature of service quality in healthcare settings (Mirawati et al., 2024).

Medical staff reliability emerged as the strongest predictor of patient satisfaction, consistent with previous studies highlighting the importance of healthcare provider competence in chronic disease management (Zhang et al., 2024). For T2DM patients who require ongoing care and regular monitoring, the perceived expertise and consistency of medical staff likely represents a fundamental aspect of service quality. This finding underscores the importance of continuous professional development for healthcare providers working with diabetic patients, particularly regarding evidence-based management approaches and effective communication of complex medical information.

The strong influence of attention to patients on satisfaction aligns with the growing emphasis on patient-centered care in chronic disease management (Yuliana & Aulia, 2024). T2DM patients often face numerous challenges in disease self-management, including medication adherence, lifestyle modifications, and psychological adjustment. Healthcare providers who demonstrate empathy, active listening, and personalized attention may better address these challenges, thereby enhancing patient satisfaction. This finding suggests that implementing structured approaches to patient-centered care, such as motivational interviewing and shared decision-making, could significantly improve the outpatient experience for T2DM patients.

Medical staff responsiveness also significantly predicted patient satisfaction, highlighting the importance of timely and appropriate responses to patient needs and concerns. This dimension may be particularly relevant for T2DM patients who may experience acute complications or require adjustments to their treatment regimens. The ability of healthcare providers to respond promptly and effectively to these situations likely contributes substantially to patients' overall perception of care quality.

While physical evidence and comfort were significant predictors of satisfaction, their influence was comparatively weaker. This suggests that while the physical environment and amenities of healthcare facilities matter to patients, interpersonal aspects of care may be more critical in shaping the overall experience of T2DM outpatients. Nevertheless, the significance of these factors indicates that hospitals should not neglect the physical aspects of the care environment, as they still contribute meaningfully to patient satisfaction.

The finding that longer duration of diabetes was associated with higher satisfaction is noteworthy. This may reflect adaptation to the healthcare system over time, development of stronger relationships with healthcare providers, or more realistic expectations based on extensive experience with diabetes care. Alternatively, it could indicate that patients who remain in the healthcare system longer are those who were more satisfied with their care from the outset.

Several limitations should be considered when interpreting these findings. First, the cross-sectional design precludes causal inferences about the relationships between service quality dimensions and patient satisfaction. Second, the study relied on self-reported data, which may be subject to recall and social desirability biases. Third, while the sample size was adequate for the planned analyses, it may not fully represent the diversity of T2DM outpatients across Indonesia. Finally, the study did not examine the relationship between patient satisfaction and clinical outcomes, which would provide additional insights into the practical implications of service quality improvements.

## 6. Conclusions

This study provides empirical evidence for the significant relationships between hospital service quality dimensions and outpatient satisfaction among Type II Diabetes Mellitus patients in Indonesian hospitals. All five service quality factors—physical evidence, medical staff reliability, medical staff responsiveness, attention to patients, and comfort—were found to be significant predictors of patient satisfaction, with medical staff reliability and attention to patients demonstrating the strongest associations. These findings have important implications for healthcare providers and hospital administrators seeking to enhance the quality of care for T2DM outpatients. First, investing in the continuous professional development of medical staff to strengthen their clinical competence and communication skills appears to be a high-priority strategy for improving patient satisfaction. Second, implementing structured approaches to patient-centered care that emphasize personalized attention and empathetic engagement could significantly enhance the outpatient experience. Third, while interpersonal aspects of care may be most influential, the physical environment and comfort of healthcare facilities should not be neglected, as they also contribute meaningfully to overall satisfaction. Future research should employ longitudinal designs to examine the causal relationships between service quality improvements and changes in patient satisfaction over time. Additionally, investigating the links between patient satisfaction and clinical outcomes would provide valuable insights into the potential health benefits of enhancing service quality. Finally, qualitative studies exploring patients' perspectives on service quality could offer deeper understanding of the specific aspects of care that matter most to T2DM outpatients.

## 7. LIMITATION

This study has several limitations that should be considered. First, the cross-sectional design limits the ability to establish causal relationships between service quality dimensions and patient satisfaction. Second, the reliance on self-reported data may introduce recall and social desirability biases. Third, the sample was drawn from three public hospitals in Indonesia, which may limit the generalizability of the findings to other healthcare settings or patient populations. Future research should employ longitudinal designs, incorporate objective measures of service quality, and include a more diverse sample to enhance the validity and generalizability of the results. Additionally, further studies could explore the moderating roles of patient characteristics such as socioeconomic status and health literacy on the relationships between service quality and satisfaction.

# References

[1]. Andres, E. B., Song, W., Song, W., & Johnston, J. M. (2019). Can hospital accreditation enhance patient experience? Longitudinal evidence from a Hong Kong hospital patient experience survey. https://doi.org/10.21203/rs.2.11759/v2

[2]. Barnes, M., Villa, C., Crump, B., Field, D., Chai, S., Mesa, R. A., Desai, P., Pal, S., Gray, J., & Ragon, B. K. (2024). Infusion immediate care: Improving hematology/oncology practice quality through expanded and timely access to infusion care. Blood, 144(Supplement 1), 3675–3675. https://doi.org/10.1182/blood-2024-200106

[3]. Federation, I. D. (2023). IDF Diabetes Atlas (11th ed.). Brussels, Belgium: International Diabetes Federation.

[4]. Frag, N. H. A., Salema Hussain Ahmed Zayed, Zharh Hussin Ahmed Frag, Zainab Ahmed Mohamed Farg, Safiah Ahmed Mohammed Faraj, Aisha Yehia Jubran Akdy, Areej Hadi Bajaafer, & Aaysh Hussain Ahmed Zayed. (2024). Revisiting diabetes with a focus on complications, innovations, and care strategies. British Journal of Nursing Studies, 4(2), 82–94. https://doi.org/10.32996/bjns.2024.4.2.10

[5]. Goldrick, C. (2025). Partnering for partnerships: How industry and healthcare system partnerships can improve health outcomes. International Journal of Integrated Care, 25, 23. https://doi.org/10.5334/ijic.ICIC24539

[6]. Ismail, M. A., Albaradi, K. H. M., Al-Sobhi, H. A. R., Al-Otaibi, M. T., Alboriadi, F. A., Tohary, H. A., Balqasem, R. A., Alkhayat, H. H., Alharbi, B. M. F., Alawad, R. A. A., & Alrashidi, N. M. (2024). Determinants of patient satisfaction in primary healthcare: A statistical exploration. Journal of Ecohumanism, 3(8). https://doi.org/10.62754/joe.v3i8.6024

[7]. Jabeen, G., Goli, G., & Kafila. (2024). Building trust: The foundations of reliability in healthcare (pp. 43–65). https://doi.org/10.1007/978-3-031-65434-3_3

[8]. Kresnowati, L., Suhartono, S., Shaluhiyah, Z., & Widjanarko, B. (2025). Drop-out to follow up screening of diabetes mellitus in Indonesia from national health insurance data 2022-2024. E3S Web of Conferences, 605, 02005. https://doi.org/10.1051/e3sconf/202560502005

[9]. Mahajan, P., Anand, A., Hossain, S., & Vishwakarma, M. (2025). Exploring patient satisfaction and determinants in outpatient services: A cross-sectional study. Cureus. https://doi.org/10.7759/cureus.77345

[10]. Mirawati, L., Fauzi, M. R., & Widjaja, Y. R. (2024). Quality of human resource services in outpatient care on outpatient satisfaction in hospitals (systematic literature review). International Journal of Economic Integration and Regional Competitiveness, 1(6), 75–99. https://doi.org/10.61796/ijeirc.v1i6.146

[11]. Nurhadiyastuti, A., Indriyani, Y., Agustina, C., & Setyawan, A. (2025). The relationship between patient perception of service quality and polyclinic revisit interest. Journal La Medihealtico, 6(1), 193–206. https://doi.org/10.37899/journallamedihealtico.v6i1.1956

[12]. Permana Putra, D., Syakurah, R. A., Idris, H., Flora, R., Najmah, N., & Misnaniarti, M. (2024). The relationship between chronic disease management program (Prolanis) for diabetes mellitus and outpatient visits diabetes mellitus patients at Class C Palembang hospitals in 2023. Eduvest - Journal of Universal Studies, 4(8), 6657–6664. https://doi.org/10.59188/eduvest.v4i8.1268

[13]. Prasetyono, J. D., Permatasari, H., Setiawan, A., Mulyono, S., Susanto, T., & Mansyur, M. (2025). Occupational health (job dissatisfaction and work-life balance) impacted to poor sleep quality in nurses. Holistik Jurnal Kesehatan, 19(1), 123–130. https://doi.org/10.33024/hjk.v19i1.659

[14]. Ravindran, D., Pillai, R. H., Srinivasa, D., & Somashekaraiah, S. (2024). Service quality evaluation of healthcare sustainability: Patient satisfaction, service delivery, and clinical outcomes (pp. 57–76). https://doi.org/10.1007/978-3-031-48075-1_6

[15]. Setianto, B., Yekti Pulihasih, A., Aan Adriansyah, A., & Sa'adah, N. (2022). Patient satisfaction with healthcare services among inpatients in the COVID-19 isolation room. Journal of Health Sciences, 15(03), 239–246. https://doi.org/10.33086/jhs.v15i03.2846

[16]. Sharma, N., & Thakare, M. M. (2024). IJCM_294A: COVID-19 vaccination status and willingness for booster dose among staff and students of tertiary care institute. Indian Journal of Community Medicine, 49(Suppl 1), S85–S85. https://doi.org/10.4103/ijcm.ijcm_abstract294

[17]. Sharma, S., Pandey, R. K., Singh, L., & Kumar, S. (2025). Diabetes mellitus: A condition that co-exists with living. Current Functional Foods, 03. https://doi.org/10.2174/0126668629351423250226113442

[18]. Suffys, C. R., Ferrazoli, R., & Sharma, E. (2025). Elevated IL-6 levels: A key contributor to insulin resistance and glucose dysregulation in type 2 diabetes. American Journal of BioMedicine, 13(1), 19–34. https://doi.org/10.18081/2333-5106/2025.13/19

[19]. Sukmawati, T., Ramadania, & Pebrianti, W. (2024). Enhancing patient satisfaction by healthcare service providers: A systematic literature review. Asian Journal of Economics, Business and Accounting, 24(12), 342–356. https://doi.org/10.9734/ajeba/2024/v24i121613

[20]. Thakkar, A., Sahoo, S., Saraswat, V., Khurana, J., Jayakumar, S. S., Kumar, A., & Bhanudas Hulwan, A. (2024). Assessing the role of leadership in promoting patient-centered care. Health Leadership and Quality of Life, 3. https://doi.org/10.56294/hl2024.366

[21]. Uly, N., Fadli, F., & Iskandar, R. (2022). Relationship between self-care behavior and diabetes self-management education in patients with diabetes mellitus type 2. Open Access Macedonian Journal of Medical Sciences, 10(E), 1648–1651. https://doi.org/10.3889/oamjms.2022.10879

[22]. Yuliana, Y., & Aulia, S. (2024). The relationship between therapeutic communication and patient satisfaction at the community health center. Journal of Community Nursing and Primary Care, 1(2), 44–49. https://doi.org/10.63202/jcnpc.v1i2.40

[23]. Zhang, M., Du, X., Jia, G., Xia, Q., Xu, Y., Wu, J., He, Y., & Wu, J. (2024). Comparative study on the satisfaction of healthcare service providers with the synergistic development of rural healthcare systems in China: Medical alliance counties vs. non-medical alliance counties. International Journal of Integrated Care, 24, 26. https://doi.org/10.5334/ijic.7677