

# Evaluation of Patient Flow Management at Prima Dental and Oral Hospital: Clinical Dental Students' Perceptions of The Patient Flow Management System Using The Technology Acceptance Model (TAM)

Jovin Friando<sup>1</sup>, Chrismis Novalinda Ginting<sup>2</sup>, Sri Wahyuni Nasution<sup>3</sup>

<sup>1</sup>Faculty of Public Health, Universitas Prima Indonesia, Medan North Sumatra

<sup>2</sup>Faculty of Public Health, Universitas Prima Indonesia, Medan North Sumatra

<sup>3</sup>Faculty of Public Health, Universitas Prima Indonesia, Medan North Sumatra

E-mail: friando1@gmail.com

## ABSTRACT

Prima Dental and Oral Hospital (RSGM Prima), as an educational and service institution, has implemented a digital-based patient flow management system to support the clinical learning process for clinical dental students. However, the success of this system implementation does not rely solely on technical aspects, but also on user acceptance, particularly the clinical dental students as direct users. This study aims to analyze the influence of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) on Attitude Toward Using (ATU) and Behavioral Intention to Use (BIU) of the patient flow management system based on the perceptions of clinical dental students at Prima Dental and Oral Hospital (RSGM Prima). The method used was a mixed methods approach with both quantitative and qualitative approaches simultaneously. Quantitative data were obtained through the distribution of questionnaires to 77 clinical dental students, while qualitative data were collected through in-depth interviews with 6 purposively selected informants. The quantitative analysis results showed a significant relationship between PU and PEOU with ATU and BIU, each with a significance value of  $< 0.05$ . Pearson correlation analysis showed that PU had a strong correlation with ATU ( $r = 0.658$ ) and BIU ( $r = 0.627$ ), while PEOU also showed a significant relationship with ATU ( $r = 0.523$ ) and BIU ( $r = 0.595$ ). The interview results supported the quantitative findings, where informants stated that the system facilitated the implementation of clinical tasks, increased efficiency, and provided a positive user experience. This study concludes that perceptions of ease of use and usefulness of the system have an important influence on students' attitudes and intentions to continuously use the patient flow management system.

**Keywords:** *Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using*

## INTRODUCTION

A well-designed information system can support clinical workflows in various ways, contributing significantly to improved patient care (Holden & Karsh, 2018). The quality of information processing is a critical factor for the success of healthcare institutions, where integrated systems can enhance service efficiency by streamlining administrative processes and preventing data duplication (Sihole et al., 2024). In the context of dental and oral healthcare services, effective information systems have become increasingly crucial due to the complexity of procedures and the need for detailed documentation (Mindiasari, 2012).

Effective patient flow management is key to delivering optimal healthcare services, particularly in teaching hospitals that involve clinical dental students in the learning process. According to Laila et al. (2024), information systems in the healthcare sector can support institutions in delivering services to the community in an effective and efficient manner. This aligns with findings by Tambiang et al. (2023), which show that the proper implementation of information systems can increase service efficiency by up to 45% and significantly reduce patient waiting times.

Common issues in patient flow management include long waiting times, slow administrative processes, and suboptimal coordination between departments. These conditions can have a significant impact on the quality of care and the clinical training of dental students, considering their limited clinical hours and the number of patients that must be managed. According to UNAIR (2023), poor patient flow management increases the risk of errors in dental care and decreases patient satisfaction.

Prima Dental and Oral Hospital, as both a healthcare provider and a teaching hospital, faces unique challenges in managing patient flow. Evaluating the patient flow management system is therefore essential to identify areas that require improvement and optimization (Sihole et al., 2024). Assist.id (2023) highlights the importance of standardizing medical record workflows to improve service quality and operational efficiency in hospitals.

Although clinical dental students do not interact directly with the hospital's integrated health information system (SIMRS), they are still involved in the patient registration process and medical record retrieval, both of which depend on the patient flow management system. Their perception of the system's ease of use and usefulness can affect the efficiency of their clinical learning experience.

A recent study by Rathnayake and Chathuranga (2021) developed the Technology Acceptance Model (TAM) to evaluate the acceptance of Electronic Health Records (EHRs) in hospitals, focusing on perceptions of ease of use and usefulness of health information systems. A similar approach was adopted by Alshammari and Alrasheed (2020), who used TAM to explore the acceptance of EHRs by healthcare providers in Saudi Arabia, taking into account additional factors such as trust in the system and organizational support, both of which play a significant role in technology acceptance.

These studies indicate that technology acceptance in hospital information systems is influenced by the factors outlined in TAM, which is relevant to this research that aims to assess the perceptions of clinical dental students regarding the effectiveness of the patient flow management system at RSGM PRIMA. In this context, TAM helps identify the perceived ease of use and usefulness of the system in supporting the clinical learning process of dental students.

## **METHODS**

This study employed a mixed methods approach. The research was conducted at Prima Dental and Oral Hospital (RSGM PRIMA) in Medan during the period of April 2025 to June 2025.

The population of this study consisted of clinical dental students who had directly participated in patient flow activities (both active students and recent graduates) at RSGM PRIMA, totaling 96 individuals. The sample was determined using the Slovin formula, resulting in 77 respondents. For the qualitative analysis, six informants were selected

purposely from clinical dental students who had direct experience with patient flow procedures at RSGM PRIMA.

This study involved two types of variables: independent and dependent variables. The independent variables were Perceived Usefulness (PU) (X1) and Perceived Ease of Use (PEOU) (X2), while the dependent variables were Attitude Toward Using (ATU) (Y1) and Behavioral Intention to Use (BIU) (Y2).

Both primary and secondary data were used in this study. Primary data were collected through questionnaire responses and in-depth interview results from the respondents. Secondary data were obtained from supporting written materials such as books, documents, journals, or articles related to the research topic.

Data collection was carried out by distributing online questionnaires to clinical dental students involved in the patient registration and medical record retrieval processes. The questionnaire included items adapted from the Technology Acceptance Model (TAM) to measure students' perceptions regarding the ease of use and usefulness of the patient flow management system. In addition, data collection was supported by interviews guided by a structured interview protocol.

The instruments used included a questionnaire adapted from the Technology Acceptance Model (TAM), which measured perceptions of the system's ease of use and usefulness in supporting clinical student activities, as well as an interview guideline.

For the quantitative method, data were analyzed using univariate and bivariate analyses with the assistance of SPSS Version 25. For the qualitative method, data analysis involved triangulation of sources, techniques, and timing, followed by data reduction, data presentation, and conclusion drawing.

## RESULTS

### Quantitative Research Results

**Tabel 1 Frequency Distribution of Respondents' Demographic Characteristics**

<b>Age Range</b>	<b>n</b>	<b>%</b>
20-25 Years	44	57,1
26-30 Years	33	42,9
<b>Total</b>	<b>77</b>	<b>100,0</b>
<b>Gender</b>	<b>n</b>	<b>%</b>
Male	10	13,0
Female	67	87,0
<b>Total</b>	<b>77</b>	<b>100,0</b>
<b>Batch</b>	<b>n</b>	<b>%</b>
Batch 11	33	42,9
Batch 12	21	27,3
Batch 13	23	29,9
<b>Total</b>	<b>77</b>	<b>100,0</b>

Source: Processed Primary Data (2025)

Table 1 presents the distribution of respondent characteristics based on age, gender, and batch of clinical dental students at RSGM Prima. The majority of respondents were aged 20–25 years (57.1%), followed by those aged 26–30 years (42.9%). In terms of gender, most respondents were female (87%), while males accounted for 13%. Regarding batch, the

highest number of respondents came from Batch 11 (42.9%), followed by Batch 13 (29.9%) and Batch 12 (27.3%).

### Univariate Analysis Results

The following are the univariate analysis results of this study.

**Tabel 2 Univariate Analysis Results**

<b>Perceived Usefulness (PU)</b>		
	<b>n</b>	<b>%</b>
Good	73	94,8
Poor	4	5,2
<b>Total</b>	<b>77</b>	<b>100.0</b>
<b>Perceived Ease of Use (PEOU)</b>		
	<b>n</b>	<b>%</b>
Good	72	93,5
Poor	5	6,5
<b>Total</b>	<b>77</b>	<b>100.0</b>
<b>Attitude toward Using (ATU)</b>		
	<b>n</b>	<b>%</b>
Good	75	97,4
Poor	2	2,6
<b>Total</b>	<b>77</b>	<b>100.0</b>
<b>Behavioral Intention to Use (BIU)</b>		
	<b>n</b>	<b>%</b>
Good	74	96,1
Poor	3	3,9
<b>Total</b>	<b>77</b>	<b>100.0</b>

Source: Processed Primary Data (2025)

Table 2 presents the univariate analysis results. Based on the findings, the majority of respondents rated various aspects of the patient flow management system at RSGM Prima positively. A total of 94.8% of respondents considered the system to be useful (perceived usefulness), and 93.5% found it easy to use (perceived ease of use). In addition, 97.4% of respondents had a positive attitude toward using the system (attitude toward using), and 96.1% expressed their intention to use the system in the future (behavioral intention to use). Only a small percentage of respondents rated each aspect negatively, with proportions ranging from 2.6% to 6.5% out of the total of 77 respondents.

### Bivariate Analysis Results

#### 1. The Relationship Between Perceived Usefulness (PU) and Attitude Toward Using (ATU) Among Clinical Dentistry Students Regarding the Patient Flow Management System at Prima Dental and Oral Hospital

**Table 3 The Relationship Between Perceived Usefulness (PU) and Attitude Toward Using (ATU)**

<b>Variabel</b>	<b>Sig. (2-tailed)</b>	<b>Pearson Correlation</b>
Perceived Usefulness (PU) terhadap Attitude toward Using (ATU)	0,000	0,658

Source: Processed Primary Data (2025)

Table 3 presents the results regarding the relationship between perceived usefulness (PU) and attitude toward using (ATU) among clinical dentistry students at Prima Dental and Oral Hospital. The Pearson correlation test shows a significance value (Sig. 2-tailed) of 0.000, indicating a significant relationship between the two variables. The Pearson correlation coefficient of 0.658 signifies a strong and positive correlation. This means the higher the perceived usefulness of the system by the respondents, the more positive their attitude toward using the system.

**2. The Relationship Between Perceived Ease of Use (PEOU) and Attitude Toward Using (ATU) Among Clinical Dentistry Students Regarding the Patient Flow Management System at Prima Dental and Oral Hospital**

**Table 4 The Relationship Between Perceived Ease of Use (PEOU) and Attitude Toward Using (ATU)**

Variabel	Sig. (2-tailed)	Pearson Correlation
Perceived Ease of Use (PEOU) terhadap Attitude toward Using (ATU)	0,000	0,523

Source: Processed Primary Data (2025)

Table 4 shows the results regarding the relationship between perceived ease of use (PEOU) and attitude toward using (ATU) among clinical dentistry students at Prima Dental and Oral Hospital. The Pearson correlation test yields a significance value (Sig. 2-tailed) of 0.000, indicating a significant relationship between the two variables. The Pearson correlation value of 0.523 indicates a moderately strong and positive correlation. This suggests that the easier the system is perceived to use, the more positive the respondents' attitude toward using it.

**3. The Relationship Between Perceived Usefulness (PU) and Behavioral Intention to Use (BIU) Among Clinical Dentistry Students Regarding the Patient Flow Management System at Prima Dental and Oral Hospital**

**Table 5 The Relationship Between Perceived Usefulness (PU) and Behavioral Intention to Use (BIU)**

Variabel	Sig. (2-tailed)	Pearson Correlation
Perceived Usefulness (PU) terhadap Behavioral Intention to Use (BIU)	0,000	0,627

Source: Processed Primary Data (2025)

Table 5 outlines the results regarding the relationship between perceived usefulness (PU) and behavioral intention to use (BIU) among clinical dentistry students at Prima Dental and Oral Hospital. The Pearson correlation test shows a significance value (Sig. 2-tailed) of 0.000, indicating a significant relationship between the two variables. The Pearson correlation value of 0.627 indicates a strong and positive correlation. This implies that the higher the perceived usefulness, the greater the respondents' intention to use the system in the future.

**4. The Relationship Between Perceived Ease of Use (PEOU) and Behavioral Intention to Use (BIU) Among Clinical Dentistry Students Regarding the Patient Flow Management System at Prima Dental and Oral Hospital**

**Table 6 The Relationship Between Perceived Ease of Use (PEOU) and Behavioral Intention to Use**

Variabel	Sig. (2-tailed)	Pearson Correlation
Perceived Ease of Use (PEOU) terhadap Behavioral Intention To Use (BIU)	0,000	0,595

Source: Processed Primary Data (2025)

Table 6 illustrates the results of the relationship between perceived ease of use (PEOU) and behavioral intention to use (BIU) among clinical dentistry students at Prima Dental and Oral Hospital. The Pearson correlation test shows a significance value (Sig. 2-tailed) of 0.000, which means there is a significant relationship between the two variables. The Pearson correlation coefficient of 0.595 indicates a moderately strong and positive relationship. This suggests that the easier the system is perceived to use, the stronger the respondents' intention to continue using the patient flow management system in the future.

## Qualitative Research Findings

### 1. Perceived Usefulness (PU)

Interview results revealed that all informants perceived the patient flow management system at Prima Dental and Oral Hospital as beneficial and supportive of their clinical activities. The system was said to accelerate patient services due to its structured and non-confusing flow. It was also perceived to improve work efficiency—especially in data archiving—clarify responsibilities between departments, and ease reporting processes. Some informants emphasized that the structured system allowed them to focus more on clinical tasks without being burdened by manual documentation. This shows that clinical students felt the system offered significant added value in conducting their clinical practice.

Informant 1 stated that the system "greatly helps speed up service processes" and minimizes patient confusion, making documentation easier due to the structured format.

Informant 2 said the "patient flow is quite clear and directed" and facilitates documentation because all data is available in a single pathway.

Informant 3 mentioned that the well-organized flow made services faster, and the system was very helpful in achieving clinical targets.

Informant 4 assessed that the system reduces time constraints, makes documentation more orderly and consistent, and efficiently supports clinical tasks.

Informant 5 noted that the system made work more efficient and that "each stage is well arranged," making reporting and clinical focus easier.

Informant 6 found the system very helpful since "patients don't have to wait too long," and documentation is more practical due to centralized data.

Conclusion: All six informants stated that the system speeds up service, improves efficiency, and simplifies documentation, ultimately supporting clinical students in achieving their clinical task goals.

### 2. Perceived Ease of Use (PEOU)

Regarding ease of use, most informants stated that although initial adaptation was needed, the system was relatively easy to learn and operate after brief guidance or training. The system was seen as logically structured, consistent, and user-friendly, enabling clinical students to operate it independently within their roles and authority. Even though full responsibility for system use and management did not lie with the students, its ease of navigation made them feel more confident and comfortable in carrying out clinical tasks. Technical issues encountered were generally minor, such as slow access during peak hours, and did not significantly disrupt the learning process. Positive perceptions of system usability supported student acceptance of its role in their clinical activities.

Informant 1 said the system is "well-structured and easy to follow" after several uses, and they could operate it independently after guidance.

Informant 2 admitted to being "initially confused" but gradually adapted because the flow remained consistent. The system was easy to use independently after two mentoring sessions.

Informant 3 found the system fairly smooth, requiring only minor adaptation, and could use it easily after grasping the basics.

Informant 4 found the system "quite consistent and easy to understand" and user-friendly, with no difficulties after the initial briefing.

Informant 5 mentioned that after initial practice, the system was easy to understand and use, with no significant technical issues.

Informant 6 said the system was quite pleasant to use and "became easy after several uses," despite experiencing network issues during busy hours.

Conclusion: Clinical students felt that the system was easy to learn, had a logical flow, and could be operated independently within their duties after initial guidance, although full system management remained under hospital control.

### **3. Attitude toward Using (ATU)**

Overall, clinical students had a very positive attitude toward the use of the patient flow management system at RSGM Prima. All informants stated that the system helped create a more organized, efficient, and directed workflow, supporting their clinical learning process. Students felt calmer and more comfortable performing assigned tasks because they no longer experienced confusion related to clinical procedures or patient documentation. Although they did not hold full responsibility for system management, students considered the system relevant to their clinical education needs, as it promoted time efficiency, task order, and achievement of practice targets. This shows that their positive attitude stemmed from experiences that made their work easier and supported professional competence development.

Informant 1 reported a good impression because the system was systematic and organized, reducing administrative burdens and supporting clinical focus.

Informant 2 felt helped and comfortable because service times were clear, and there was no guessing involved in clinical procedures.

Informant 3 said the system was helpful, structured, and aligned with clinical student needs.

Informant 4 viewed the system as professional in management and educationally supportive, as workflow became more standardized.

Informant 5 stated that the system gave a professional and efficient impression and helped reduce confusion in carrying out tasks.

Informant 6 felt more comfortable because all stages were clear and coordinated, so students weren't confused in deciding on actions.

Conclusion: Informants demonstrated a positive attitude toward system use, as it helped them administratively and made their clinical practice more comfortable and directed.

### **4. Behavioral Intention to Use (BIU)**

Informant 1 said they would recommend the system, especially for clinical students, because it helps provide a workflow and guidance.

Informant 2 expressed they would feel more comfortable working in places that use such systems and are ready to recommend its use.

Informant 3 was willing to use similar systems elsewhere as long as it was stable and easy to use.

Informant 4 even wanted to be involved in system development if given the chance, believing the system was a good model for other educational institutions.

Informant 5 expressed willingness to continue using the system and suggested having written guides or video tutorials for easier onboarding.

Informant 6 said the system was worth recommending and would suggest it to peers. They also proposed simulations or workshops before clinical rotations.

Conclusion: Students showed strong intentions to continue using the system, were willing to promote and develop it further, and suggested preparatory training for new students to ease adaptation.

## **CONCLUSION**

Based on the research results, it was found that the majority of respondents were aged 20–25 years (57.1%), female (87%), and from batch 11 (42.9%). There is an influence of perceived usefulness (PU) on the attitude toward using (ATU) of clinical dental students regarding the

patient flow management system at Prima Dental and Oral Hospital according to their perceptions. There is also an influence of perceived ease of use (PEOU) on the attitude toward using (ATU) of clinical dental students regarding the patient flow management system at Prima Dental and Oral Hospital according to their perceptions. Furthermore, there is an influence of perceived usefulness (PU) on the behavioral intention to use (BIU) the patient flow management system at Prima Dental and Oral Hospital according to the students' perceptions. Finally, there is an influence of perceived ease of use (PEOU) on the behavioral intention to use (BIU) the system according to the perceptions of clinical dental students.

### ACKNOWLEDGEMENT

The author would like to express sincere gratitude to the academic supervisor for the invaluable guidance, direction, motivation, and knowledge provided throughout the research process. Appreciation is also extended to the management of Prima Dental and Oral Hospital for granting research permission, as well as for their support and cooperation during the implementation of this study. The author also thanks all clinical dental students who willingly participated as respondents and shared their valuable perspectives, which significantly contributed to the completeness of the research data. Lastly, the author conveys deep appreciation to everyone who has supported this research, either directly or indirectly. May all the assistance and support received be rewarded accordingly

### REFERENCES

- Alshammari, M., & Alrasheed, A. (2020). Exploring the Determinants of Electronic Health Record System Acceptance among Healthcare Providers in Saudi Arabia: A Modified Technology Acceptance Model Approach. *BMC Medical Informatics and Decision Making*, 20(1), 11.
- Assist.id. (2023). Alur Rekam Medis Rumah Sakit Rawat Jalan dan Inap.
- Holden, R. J., & Karsh, B.-T. (2018). The Technology Acceptance Model: Its past and its future in health care. *Journal of Biomedical Informatics*, 43(1), 159-172.
- Kurniawan, A., Yulianti, F., & Putri, T. E. (2022). The Effect of Perceived of Ease of Use, Perceived of Benefits, Trust, Perceived of Risk and Level of Understanding of Electronic Money On Interest In Using E-Money. *Accounting Research Journal of Sutaatmadja*, 06(01), 132–153.
- Laila, L., Sulistyawati, S., & Hidayat, M. S. (2024). Evaluasi Penerapan Sistem Informasi Manajemen Rumah Sakit (SIMRS): Studi Literatur. *Jurnal Promotif Preventif*, 7(4), 710-723.
- Mindiasari, A. (2012). Evaluasi Sistem Rekam Medis Berbasis Komputer Pada Rumah Sakit Gigi Dan Mulut (RSGM) Universitas Jember.
- Ningrum, S. (2020). Pengaruh Manfaat, Kepercayaan, Dan Kemudahan Penggunaan Terhadap Minat Nasabah Menggunakan Mobile Banking Di Bank Mega Syariah Cabang Palu.
- Rathnayake, R. M. A. S., & Chathuranga, M. G. (2021). Factors Influencing the Adoption of Electronic Health Records in Sri Lankan Hospitals: An Extended Technology Acceptance Model Approach. *International Journal of Information Management*, 59, 102328.
- Sihole, P. O., Lesmana, A. E., & Wasir, R. (2024). Strategi dan Evaluasi Sistem Informasi Kesehatan di Indonesia: Tinjauan Literatur. *Jurnal Kesehatan Tambusai*, 5(2), 4811-4819.
- Tambing, O. S., Mangindara, M., Ekawaty, D., & Pratiwi, R. D. (2023). Pengaruh Aplikasi Technology Acceptance Model (TAM) Terhadap Penerimaan Sistem Pendaftaran

Online di Rumah Sakit TK II Pelamonia Makassar. *Public Health and Medicine Journal*, 1(1), 24-33.

UNAIR (2023). Kualitas Pelayanan Perawatan Gigi Membantu dalam Manajemen Risiko Perawatan Gigi secara Komprehensif.