

The Predisposing, Enabling, and Reinforcing Factors of Patient Behavior in The Care and Treatment Plan

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ABSTRACT

One of the main challenges in inpatient management is the low level of compliance and engagement of patients with the care and treatment plans developed by the medical team. This issue is believed to be influenced by predisposing, enabling, and reinforcing factors. This study aimed to analyze the influence of these factors on inpatient behavior in adhering to care and treatment plans. This research employed a quantitative approach with a cross-sectional study design. The study was conducted at Baiturrahim Jambi Hospital. The population consisted of 380 inpatients, with a sample size of 258 selected through purposive sampling. Data analysis was carried out in three stages: univariate analysis, bivariate analysis using the Chi-Square test, and multivariate analysis using multiple logistic regression. The results indicated that knowledge, attitude, trust, access to health facilities, hospital infrastructure, health worker feedback, and previous experience significantly influenced inpatient behavior. In contrast, the availability of information and family support did not show a significant effect. Among all variables, knowledge had the strongest influence, patients with good knowledge were 21.7 times more likely to exhibit positive behavior in following the care and treatment plan. In conclusion, inpatient behavior in adhering to care and treatment plans is most strongly influenced by knowledge, supported by attitudes, trust, access, and feedback, while informational and familial factors play a lesser role.

Keywords: predisposing factors; enabling factors; reinforcing factors; inpatient behavior; care and treatment plan

INTRODUCTION

Patient behavior in undergoing care plans and treatment in hospitals is one of the factors determining the success of the healing process. Patient adherence to treatment is of paramount importance, so treatment non-adherence remains a significant challenge in managing patients' chronic conditions.⁽¹⁾ Low patient adherence leads to health deterioration and complications. However, in practice, many patients exhibit behaviors that are inconsistent with the established treatment plan, resulting in prolongation of the treatment period, increased risk of complications, and increased treatment costs.⁽²⁾ One of the major problems encountered in the management of inpatients is the low level of patient behavior and adherence to the care and treatment plan developed by the medical team.⁽³⁾

Data shows that non-compliance with treatment remains a major problem. According to a report by the World Health Organization (WHO), up to 50% of patients with chronic diseases fail to follow their doctors' treatment instructions.⁽¹⁾ In the United States, non-adherence contributes to 33–69% of hospitalization costs and accounts for 50% of treatment failures, 125,000 deaths, and 25% of hospitalizations each year.^(1,4) In Indonesia, approximately 50% of medications prescribed for chronic diseases are not consumed, and 20–30% of prescriptions are never filled. Additionally, a systematic review indicates that patient non-adherence ranges from 40–75%, while 70.4% of emergency room visits are caused by medication non-adherence.⁽⁵⁾ Non-adherence to medication can be caused by various factors, including patients' lack of understanding of the importance of treatment, unwanted side effects, or difficulties in accessing medication. Additionally, social and economic factors, such as treatment costs and family support, also play a significant role in influencing patient adherence.⁽⁶⁾ This not only has serious consequences for individual patients but can also significantly increase the workload of healthcare staff and raise hospital operational costs.

To understand the causes of this non-compliance, a comprehensive approach is needed that considers the various factors that influence patient behavior. Green & Kreuter through the PRECEDE-PROCEED Model identified three main categories of factors that influence health behavior, namely predisposing, enabling, and reinforcing factors.⁽⁷⁾ Predisposing factors include aspects such as patients' knowledge, attitudes, and cultural values, which predispose them to certain behaviors. Enabling factors include the availability of resources and accessibility of services that enable or facilitate health behaviors, while reinforcing factors include feedback and social support that reinforce or encourage these behaviors.⁽⁸⁾ Supported by the behavioral theory of the Health Belief Model developed by Rosenstock, patient behavior is strongly influenced by their perceptions of susceptibility to disease, severity of illness, benefits of recommended health actions, and barriers that may be encountered.⁽⁹⁾ These factors align with the predisposing, enabling, and reinforcing factors identified by Green and Kreuter. For example, patients who have sufficient knowledge (predisposing factors) about the importance of following a treatment plan are likely to be more compliant. However, without family support or adequate access to health services (enabling factors), they may still experience difficulties in following the plan.⁽⁸⁾

Predisposing factors (knowledge), supporting factors (health education and health worker support), and reinforcing factors (family support) have a significant positive correlation with tuberculosis patient behavior.⁽¹⁰⁾ Predisposing, supporting, and reinforcing factors were positively correlated with each other, except for family support and health worker support. Predisposing factors (knowledge) and supporting factors (health worker support) have a direct effect on the behavior of pulmonary TB patients in treatment. Interventions designed to address predisposing, enabling, and reinforcing factors holistically can improve patient adherence to care and treatment of pulmonary tuberculosis patient.⁽¹¹⁾ This suggests that a multidimensional approach that considers the

various factors that influence patient behavior can be an effective strategy in improving treatment outcomes. In relation to the above, it is known that predisposing, enabling, and reinforcing factors influence inpatient care and treatment plans. In general, this phenomenon also occurs at Baiturrahim Jambi Hospital. The problem of non-compliance of inpatients in carrying out treatment plans at Baiturrahim Jambi Hospital has become a serious challenge that has a direct impact on the effectiveness of care and the quality of health services in the hospital. As a result, based on data obtained from the medical records of Jambi Baiturrahim Hospital, it shows that during the year 2023, more than 40% of hospitalized patients experienced an extension of the hospitalization period due to noncompliance with the established treatment plan.⁽¹²⁾

Through the above background, this study focuses on the influence of predisposing, enabling, and reinforcing factors on patient behavior in the care and treatment plan of hospitalized patients at Baiturrahim Jambi Hospital. This study aimed to analyze the influence of these factors on inpatient behavior in adhering to care and treatment plans.

METHODS

This study was conducted from December 2024 to January 2025 at Baiturrahim Hospital in Jambi, using a quantitative research method with a cross-sectional study design. The population in this study consisted of all inpatients at Baiturrahim Hospital in Jambi, totaling 380 individuals. The sample was drawn from this population using the Lemeshow formula,⁽¹³⁾ which yielded a minimum required sample size of 258 participants. Sampling was determined through purposive sampling, involving the selection of hospitalized patients who met the inclusion criteria: aged 21 years and above, compos mentis, able to communicate effectively in Indonesian, and willing to participate in accordance with the research objectives.

The data for this study were obtained from two sources: primary and secondary data. Data collected using the cross-sectional approach were analyzed through univariate analysis with descriptive statistics to identify the characteristics of the research subjects and the distribution of each studied variable. To examine the relationship between the independent variables: knowledge, attitude, belief, access to health facilities, hospital facilities, availability of information, family support, healthcare provider feedback, and previous experience; and the dependent variable of inpatient behavior in following treatment and medication plans. Bivariate analysis was performed using the Chi-Square test. Furthermore, multivariate analysis was conducted to identify predisposing, enabling, and reinforcing factors that simultaneously influenced patient behavior in care and treatment plans at Baiturrahim Hospital in Jambi.

This study was validated for reliability and received ethical approval from the Health Research Ethics Committee of Prima Indonesia University, with Certificate Number: 060/KEPK/UNPRI/V/2025.

RESULTS

Based on the data in Table 1, the majority of patients were in the early adult age category (21-40 years), accounting for 42.6% of the sample, while a smaller proportion were in the late adult age category (>60 years), comprising 16.7%. In terms of gender, most patients were female (56.2%).

Table 1. Distribution of demographic characteristics of respondents at the Hospital Baiturrahim Jambi

No	Demographic characteristics	Frequency	Percentage
1.	Age:		
	a. Early adult	105	40.7
	b. Intermediate adult	110	42.6
	c. Late adult	43	16.7
2.	Gender:		
	a. Male	113	43.8
	b. Female	145	56.2
3.	Education:		
	a. Elementary/secondary school	45	17.4
	b. High school	151	58.6
	c. Higher education	62	24.0
4.	Marital status:		
	a. Mating	213	82.6
	b. Unmarried	45	17.4
5.	Work:		
	a. Work	185	71.7
	b. Not Working	73	28.3

The majority of patients showed characteristics that support compliant behavior towards care and treatment plans at Baiturrahim Jambi Hospital, evidenced by the proportion of 71.7%. The most respondents had positive attitude (74.4%). The most patients had a high level of trust (76.0%). The majority of patients stated that access to health facilities was categorized as easily accessible (76.0%). The most patients stated that hospital facilities were in a good category (77.5%). The most patients stated that the availability of information was in the good category (Table 2).

Table 2. Distribution of knowledge, attitude, trust, access to health facilities, quality of hospital facilities, information availability, family support, health worker feedback, previous experience and patient behavior at Baiturrahim Jambi Hospital

No.	Variable	Frequency	Percentage
1.	Knowledge:		
	a. Good	185	71.7
	b. Less	73	28.3
2.	Attitude:		
	a. Positive	192	74.4
	b. Negative	66	25.6
3.	Trust:		
	a. High	184	71.3
	b. Low	74	28.7
4.	Access to health facilities:		
	a. Easy	196	76.0
	b. Difficult	62	24.0
5.	Quality of hospital facilities:		
	a. Good	185	71.7
	b. Less	73	28.3
6.	Information availbiity		
	a. Good	200	77.5
	b. Less	58	22.5
7.	Family support:		
	a. Good	211	81.8
	b. Less	47	18.2
8.	Health worker feedback:		
	a. Good	187	72.5
	b. Less	71	27.5
9.	Previous experience:		
	a. Good	206	79.8
	b. Less	52	20.2
10.	Patient Behavior:		
	a. Good	191	74.0
	b. Less	67	26.0

The results showed that most of the patients stated that they were well supported by their families (81.8%). The most patients stated that they received good feedback from health workers (72.5%). The most patients stated that they had a good previous experience (79.8%). Based on patient behavior, most patients (74.0%) showed good behavior in care and treatment plans (Table 2).

Several factors significantly influenced inpatient behavior in following care and treatment plans at Baiturrahim Jambi Hospital in 2025. Patient knowledge showed a strong association, with a chi-square test yielding a p-value of 0.000, indicating a statistically significant effect. Similarly, attitude was found to be influential, as evidenced by a p-value of 0.000, confirming that patients with positive attitudes were more likely to adhere to their treatment plans. Trust also played a significant role, with the analysis producing a p-value of 0.000, suggesting that patients who trusted their healthcare providers demonstrated better compliance. Hospital facilities were another determining factor, with a p-value of 0.000 indicating that patients who perceived the facilities as adequate were more likely to exhibit positive behavior. The availability of information was also statistically significant, with a p-value of 0.000, showing that patients who had access to clear and sufficient information tended to follow their care plans more effectively. Family support emerged as a meaningful factor, with a p-value of 0.000, suggesting that patients who felt supported by their families were more engaged in their treatment process. Feedback from health workers was found to be highly influential, as indicated by a p-value of 0.000, reinforcing the importance of responsive communication in shaping patient behavior. Lastly, previous experience showed a significant effect, with a p-value of 0.000, demonstrating that patients with prior positive healthcare experiences were more likely to comply with current care and treatment plans (Table 3).

Table 3. The results of bivariate analysis

No.	Variable	Patient behavior				p-value
		Less		Good		
		Frequency	Percentage	Frequency	Percentage	
1.	Knowledge a. Less b. Good	43 24	58.9 13.0	30 161	41.1 87.0	0.000
2.	Attitude a. Negative b. Positive	44 23	66.7 12.0	22 169	33.3 88.0	0.000
3.	Trust a. Low b. High	41 26	55.4 14.1	33 158	44.6 85.9	0.000
4.	Access to health facilities a. Difficult b. Easy	41 26	66.1 13.3	21 170	33.9 86.7	0.000
5.	Quality of hospitals facilities a. Less b. Good	34 33	58.6 16.5	24 167	41.4 83.5	0.000
6.	Information availability a. Less b. Good	37 30	42.0 17.6	51 140	58.0 82.4	0.000
7.	Family support a. Less b. Good	27 40	57.4 19.0	20 171	42.6 81.0	0.000
8.	Health worker feedback a. Less b. Good	39 28	54.9 15.0	32 159	45.1 85.0	0.000
9.	Previous experience a. Less b. Good	37 30	71.2 14.6	15 176	28.8 85.4	0.000

Tabel 4. The results of multivariate analysis

Variable	B	p-value	Exp(B)	95%CI for Exp(B)
Knowledge	3.079	0.000	21.730	5.123 - 92.172
Attitude	2.258	0.001	9.563	2.649 - 34.520
Trust	2.624	0.000	13.786	3.468 - 54.802
Access to health facilities	2.684	0.000	14.648	4.067 - 52.755
Quality of hospital facilities	2.588	0.000	13.300	3.124 - 56.612
Health worker feedback	2.099	0.001	8.161	2.343 - 28.434
Previous experience	1.658	0.009	5.247	1.508 - 18.250
Constant	-9.797	0.000	0.000	

Multivariate analysis using multiple logistic regression revealed that the combined model of seven variables; knowledge, access to health facilities, trust, hospital facilities, attitude, health worker feedback, and previous experience; significantly influenced inpatient behavior in following care and treatment plans, with a p-value of $0.000 < 0.05$. Among these, knowledge emerged as the most dominant factor, where patients with good knowledge were 21.7 times more likely to comply with treatment plans. Access to health facilities and trust also showed strong effects, with patients reporting easy access and high trust being 14.6 and 13.8 times more likely, respectively, to exhibit positive behavior. Hospital facilities, attitude, feedback from health workers, and previous experience contributed meaningfully, with Exp(B) values ranging from 13.3 to 5.2. The regression model indicated that these seven factors collectively accounted for 94.92% of the variation in patient behavior, while the remaining 5.08% was attributed to other unmeasured variables (Table 4).

DISCUSSION

The results of the study conducted at Baiturrahim Jambi Hospital in 2025 showed a significant influence of knowledge on the behavior of inpatients in adhering to care and treatment plans. The knowledge variable had

an Exp(B)/OR value of 21.730, indicating that patients with good knowledge were 21.7 times more likely to demonstrate positive behavior in following care and treatment plans compared to those with limited knowledge. This finding suggests that inpatient behavior is closely related to the level of understanding patients have regarding their health conditions, the purpose of medical procedures, and the benefits of the treatments they receive. When patients possess adequate knowledge, they tend to be more trusting and cooperative with healthcare providers. Such understanding fosters a sense of preparedness and reduces fear or uncertainty, enabling patients to take an active role in their recovery process.

This result aligns with the study which found a strong relationship between knowledge, attitudes, and patient behavior in medication adherence among tuberculosis patients in Semarang City. Patients with good knowledge were shown to be more compliant with treatment protocols.⁽¹⁴⁾ Knowledge plays a crucial role in shaping how patients engage with their care, helping them recognize the importance of following medical instructions; such as therapy schedules, dietary guidelines, and medication use; thus promoting openness and discipline in treatment adherence.⁽⁷⁾ Furthermore, well-informed patients are more likely to participate in discussions with healthcare providers, share relevant information, and ask questions about aspects they do not understand, thereby enhancing the quality of communication between patients and medical personnel.⁽¹⁵⁾

The study also revealed a significant effect of attitude on inpatient behavior in care and treatment plans. The attitude variable had an Exp(B)/OR value of 9.563, meaning that patients with a positive attitude were 9.6 times more likely to exhibit good behavior compared to those with a negative attitude. This indicates that patient behavior is influenced by their disposition toward the treatment process. Patients who follow medical instructions, adhere to therapy schedules, and engage actively with healthcare providers tend to have a more optimistic outlook, reflecting trust in the services provided and a strong desire to recover.

This finding is supported by a meta-analysis which demonstrated that the empathetic attitude of healthcare workers significantly enhances patient satisfaction, reinforcing the role of positive attitudes in fostering cooperative behavior during treatment.⁽¹⁶⁾ When patients maintain a constructive attitude, they are more likely to be receptive and compliant with medical guidance.⁽¹⁷⁾ Conversely, negative attitudes or skepticism toward treatment can hinder patient engagement and complicate the therapeutic process. Such attitudes not only affect treatment outcomes but also strain the relationship between patients and healthcare providers.⁽¹⁸⁾

Based on the results of the study, trust was found to significantly influence the behavior of inpatients in following care and treatment plans at Baiturrahim Jambi Hospital in 2025. The trust variable had an Exp(B)/OR value of 13.786, indicating that patients with a high level of trust were 13.8 times more likely to exhibit positive behavior compared to those with low trust. This finding suggests that inpatient behavior is closely related to the level of trust patients place in the services provided. Patients who are cooperative, adhere to therapy schedules, and actively participate in the treatment process tend to demonstrate higher levels of trust in healthcare personnel. Such trust is reflected in a positive attitude, a sense of security during treatment, and confidence in the effectiveness of medical interventions.

This result aligns with previous research conducted in three community health centers (Puskesmas) in South Jakarta, which found that trust was the primary factor influencing treatment adherence among pediatric tuberculosis patients, with an odds ratio of 8.02.⁽¹⁹⁾ Trust in healthcare providers and facilities plays a crucial role in shaping patient behavior. When patients feel confident in the competence of medical personnel and the quality of hospital services, they are more likely to follow instructions and undergo treatment with discipline.⁽¹³⁾ This trust fosters a sense of comfort and safety, encouraging patients to engage more actively in their recovery. Conversely, distrust toward healthcare providers or treatment procedures can hinder patient compliance and disrupt the healing process.

The study also demonstrated that access to health facilities significantly affected inpatient behavior in care and treatment plans. The access variable had an Exp(B)/OR value of 14.648, meaning that patients who perceived health facilities as easily accessible were 14.6 times more likely to behave positively than those who considered access difficult. This finding indicates that ease of access is a key determinant of patient engagement. Patients who arrive on time, bring complete documentation, and understand service procedures tend to receive care more efficiently. Such behavior reflects their readiness to undergo treatment and facilitates smoother service delivery by healthcare workers.

These findings are consistent with research which showed that ease of access to health services significantly influenced medication adherence among hypertensive patients at the South Medan Area Health Center, with a p-value of 0.001.⁽²⁰⁾ Patients with convenient access; such as strategic locations, flexible visiting hours, and adequate medical infrastructure; tend to follow treatment plans more consistently. Smooth access enables patients to attend routine check-ups, therapies, and consultations without barriers, thereby promoting discipline in maintaining their health.⁽⁷⁾

Furthermore, the study revealed that hospital facilities had a significant impact on inpatient behavior. The hospital facility variable had an Exp(B)/OR value of 13.300, indicating that patients who rated hospital facilities as good were 13.3 times more likely to exhibit positive behavior than those who rated them poorly. This suggests that the availability and quality of hospital infrastructure strongly influence patient compliance. When patients perceive the hospital environment as supportive; featuring comfortable rooms, complete medical equipment, and accessible services; they are more likely to cooperate and feel confident throughout the treatment process. A conducive environment not only enhances comfort but also reinforces the patient's motivation to recover.

Supporting this, research Medika Lestari Hospital found that the cleanliness and comfort of outpatient rooms significantly increased patient satisfaction, which in turn improved treatment adherence.⁽²¹⁾ Supportive facilities help patients feel respected and more receptive to medical instructions, as they trust that the care provided is optimal. A positive hospital atmosphere also accelerates patient adaptation, fostering greater cooperation and discipline during treatment.⁽¹³⁾

Based on the results of the study, it was found that the availability of information did not significantly influence the behavior of inpatients in following care and treatment plans at Baiturrahim Jambi Hospital in 2025. This finding contrasts with research conducted in a private hospital,⁽²²⁾ which showed that service quality, information technology infrastructure, and the availability of medical personnel positively affected patient satisfaction. In general, the availability of clear and easily understood information is known to influence patient behavior in undergoing treatment. Sufficient information helps patients comprehend the importance of each step in the treatment process; such as therapy schedules or dietary regulations; thus encouraging discipline and cooperation.⁽²³⁾

The absence of a significant relationship between information availability and inpatient behavior at Baiturrahim Jambi Hospital may be attributed to several factors. One possible explanation is the ineffective delivery of information, despite its availability. In healthcare settings, the mere presence of information is insufficient if it is not communicated in a manner that is accessible and understandable, particularly for patients with low health literacy. Additionally, cultural norms, personal beliefs, and previous experiences may exert a stronger influence on patients' decisions than formal medical information. Therefore, a more holistic approach involving interpersonal communication and continuous health education is essential to improve patient adherence to treatment plans.

Similarly, the study found that family support did not have a significant effect on inpatient behavior in following care and treatment plans at Baiturrahim Jambi Hospital in 2025. This result differs from research conducted at Cilegon Regional Hospital,⁽²⁴⁾ which showed that patients with type 2 diabetes mellitus who received strong family support had higher medication adherence, with a p-value of 0.047. The lack of influence observed in this study may be due to the ineffective communication of information, especially among patients with limited health literacy. Even when information is available, it may not be fully understood unless conveyed clearly and personally by medical staff. Moreover, patients often rely more on input from family members, religious leaders, or personal experiences than on formal medical advice.

Although family involvement; through emotional support, motivation, and assistance in following medical instructions; can enhance patient compliance, the findings at Baiturrahim Hospital suggest a shift toward greater patient autonomy. Adult and elderly patients increasingly make independent health decisions, relying more on professional medical guidance than on family input. The presence of adequate facilities and effective communication between patients and healthcare providers may further reduce dependence on family support. Factors such as educational background, previous illness experience, and trust in the healthcare system may also reinforce patients' independent attitudes, making family support statistically less influential in shaping compliance behavior.⁽²⁵⁻²⁷⁾

In contrast, the study showed that feedback from health workers significantly influenced patient behavior in care and treatment plans. The health worker feedback variable had an Exp(B)/OR value of 8.161, indicating that patients who received good feedback were 8.2 times more likely to exhibit positive behavior than those who received less feedback. This finding underscores the importance of clear and constructive communication from medical personnel. When patients receive timely and informative feedback, they feel valued and supported, which enhances their engagement in the healing process. Feedback helps patients understand their progress and identify areas for improvement, fostering greater motivation and discipline.

This result aligns with research conducted at the West Lampung Health Center, which found that health worker performance; including communication and information provision—was significantly associated with patient satisfaction ($p = 0.034$). Effective feedback strengthens patients' sense of involvement and responsibility for their health, thereby improving adherence to medical instructions.⁽¹⁵⁾

The study also revealed that previous experience significantly affected inpatient behavior in care and treatment plans. The previous experience variable had an Exp(B)/OR value of 5.247, meaning that patients with positive prior experiences were 5.2 times more likely to comply with treatment plans than those with less favorable experiences. Patients who felt comfortable and well cared for during previous hospital visits tended to be more cooperative and confident in following medical instructions. Positive experiences foster trust in the hospital's ability to provide effective care, making patients more receptive to treatment plans.

This finding is consistent with research which demonstrated that patient experience significantly influences the quality of inpatient services, with trust serving as an intervening variable. Patients with positive treatment histories are generally more confident and less anxious, which facilitates active participation in the treatment process. Conversely, negative experiences may lead to skepticism and reluctance, hindering compliance.⁽²⁸⁾ Supportive experiences create a sense of security and reduce uncertainty, encouraging patients to engage more fully and follow treatment plans with greater discipline.⁽²⁹⁾

This study has several limitations. The independent variables did not include other psychosocial factors such as stress levels, emotional conditions, or cultural influences that may affect patient behavior. Additionally, the use of a cross-sectional design limits the ability to generalize findings to broader populations or to establish long-term causal relationships. Information bias may also be present, as data collection relied on patient self-reporting through questionnaires, which are subject to individual perceptions.

CONCLUSION

This study confirms that predisposing, enabling, and reinforcing factors significantly shape inpatient behavior in following care and treatment plans at Baiturrahim Jambi Hospital. Patient compliance was supported by good knowledge, positive attitudes, trust in health services, accessible facilities, and constructive feedback from health workers. These findings highlight the need for a holistic approach that combines education with a supportive care environment to strengthen patient engagement both socially and psychologically.

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