

Shared Decision-Making Based Structured Communication in Improving Patient Understanding and Patient Safety

Diaz Alifarizki Zuvarcan¹⁾ Dasrun Hidayat²⁾ Mira Veranita³⁾

^{1,2,3} Program Studi Magister Manajemen, Universitas Adhirajasa Reswara Sanjaya, Bandung, Indonesia

*E-mail: alifarizki1@gmail.com

Submitted: 2026-08-26	Accepted: 2026-08-26	Accepted: 2026-08-26	Accepted: 2026-08-26
-----------------------	----------------------	----------------------	----------------------

ABSTRACT

Clinical communication failures and low patient involvement are the primary causes of patient safety incidents in hospitals. The asymmetrical communication in the inpatient wards of RSUD Dr. Moewardi potentially reduces patient understanding, particularly in chronic cases involving high-risk therapies. This study aims to explore the implementation of a structured communication system based on Shared Decision-Making (SDM) and to measure its impact on enhancing patient understanding (health literacy) and strengthening personalized-care-based patient safety. This study employs a Mixed Methods Sequential Exploratory design. The qualitative exploratory phase involves in-depth interviews with 11 informants (healthcare professionals, head nurses, and patients/families) to investigate the implementation of communication and its barriers in the field. These findings serve as the foundation for developing quantitative instruments, which will be distributed to 96 healthcare professionals using a proportionate stratified random sampling technique. The data will be analyzed using inferential statistics to evaluate the effects and mediation among variables. The results are expected to demonstrate that health literacy significantly mediates the impact of structured communication on patient safety. The implications of this study are projected to provide a strategic foundation for hospital management to reconstruct bedside handover and educational guidelines, making them more personal and participatory to prevent Adverse Events (AEs).

Keywords: Structured Communication, Shared Decision-Making, Patient Safety, Health Literacy, Personalized-Care, Hospital

DOI: 10.31949/fbmj.v4i1.19882

INTRODUCTION

Patient safety occupies a central position as a key indicator of the quality of healthcare services worldwide and remains the most complex challenge for modern hospitals (Azyabi et al., 2021). The World Health Organization (WHO), through its Global Patient Safety Action Plan 2021–2030, highlights that injuries due to medical care are a leading cause of global death and disability, with one in ten patients experiencing mostly preventable incidents (WHO, 2021). The paradigm shift in healthcare towards personalized care confirms that these safety issues can no longer be addressed merely through conventional Standard Operating Procedures (SOPs) (Bates & Singh, 2018). Instead, patient safety is heavily dependent on how care is communicated and personalized to meet each patient's unique needs. A report by the Organisation for Economic Co-operation and Development (OECD) notes that a massive portion of hospital expenditures is spent managing the impacts of safety failures, proving that patient safety is a systemic phenomenon requiring participatory and personalized protection strategies (Slawomirski et al., 2017).

In Indonesia, the portrait of patient safety faces similar, if not more severe, challenges due to a low incident reporting culture driven by healthcare workers' fear of sanctions (Gunawan et al., 2022; Najihah, 2018). Root cause analyses consistently identify communication breakdown as the primary contributing factor, accounting for more than 70% of sentinel events in hospitals (Fadhilah et al., 2025). This risk escalates dramatically when patients are excluded from clinical decision-making, known as Shared Decision-Making (SDM). Without active involvement, patients fail to understand the purpose of their treatments and the critical red flags to watch for, rendering the safety defense system vulnerable (Waddell et al., 2021).

This systemic communication gap is specifically evident at Dr. Moewardi Surakarta Hospital, a tertiary referral hospital where actual conditions in the inpatient wards deviate from ideal safety standards. Initial observations reveal an asymmetrical and unstructured communication pattern between healthcare workers and high-risk chronic patients. Consequently, therapeutic side effects often go unmonitored because patients are not adequately educated to recognize them (Waddell et al., 2021). Furthermore, public complaints recorded on digital platforms highlight a lack of risk communication transparency prior to medical procedures; informed consent is frequently reduced to a one-way administrative formality without adequate space for dialogue (Google Maps Review of Dr. Moewardi Surakarta Hospital, 2026). Although the Ministry of Health Regulation Number 11 of 2017 mandates effective communication and reconfirmation through techniques like teach-back, these practices are not consistently applied in the ward (Ministry of Health of the Republic of Indonesia, 2017).

Previous studies, have predominantly evaluated healthcare workers' compliance with communication methods like SBAR and TBaK, yet they fail to address the core issue of miscommunication between healthcare workers and patients (Scheibler, 2024). Testing the role of patient health literacy as a mediator between communication and patient safety is an essential focus that remains unanswered (Sawyer & Opel, 2023). Therefore, this research offers novelty by employing a Mixed Method Sequential Exploratory approach to deeply investigate qualitative communication barriers in the wards before quantitatively testing a structured communication model (Creswell & Clark, 2018). The urgency of this research lies in the critical need to resolve the high rate of miscommunication at Dr. Moewardi Surakarta Hospital, with the ultimate goal of providing comprehensive recommendations to hospital management for realizing personalized care-based patient safety.

LITERATURE REVIEW, FRAMEWORK AND HYPOTHESIS

1. Structured Communication Systems in Clinical Services

Structured communication systems are the main variable that will be further researched in this study because they play an important role in determining the success of patient care in inpatient wards. A structured communication system in a hospital environment is a standardized protocol for the delivery of medical information that aims to minimize ambiguity and misinterpretation between health workers. Unstructured communication is often the main cause of care fragmentation, where crucial information about the patient's condition is not accurately conveyed during the care transition process (Miloslavich et al., 2018).

One of the most effective forms of structured communication is the SBAR (*Situation, Background, Assessment, Recommendation*) framework. This model allows nurses and doctors to organize information logically, from the patient's current situation, clinical background, condition assessment, to action recommendations. The implementation of structured communication such as SBAR has been proven to increase staff confidence in reporting critical conditions and significantly reduce the number of patient safety incidents caused by verbal communication errors (Thomas et al., 2019). In the context of bedside handover, this system ensures that patients are also exposed to the same information, thus creating transparency in services (Veranita et al., 2023). Consistent and humanistic communication strategies further strengthen patient trust and align the hospital's intended image with patients' perceptions of service quality (Murtini, 2026).

2. **Shared Decision-Making (SDM) dan Three-Talk Model**

Shared Decision-Making (HR) is defined as a collaborative process in which healthcare workers (DPJPs and nurses) share the best available medical information with patients, while patients are encouraged to consider those choices based on their personal values and preferences. This approach represents a shift from the traditional paternalistic model to a partnership model that places patients as active subjects in their care (Sawyer & Opel, 2024). Effective interpersonal communication underpins this partnership by fostering open dialogue, empathy, and mutual understanding between healthcare workers and patients (Mardianti, 2025).

3. **Health Literacy and Patient Understanding**

Health literacy is defined as an individual's ability to acquire, process, and understand basic health information and services necessary to make informed health decisions (C. Liu et al., 2020). In the context of hospitalization, *health literacy* refers to the extent to which patients are able to understand the information conveyed by healthcare workers (from diagnosis, therapy plans, to post-treatment self-care instructions) and actively use it as a basis for clinical decision-making. (Coughlin et al., 2020) emphasizing that *health literacy* is not just the ability to read health information, but a multidimensional capability that includes cognitive, social, and relational aspects in patient interaction with health workers.

4. **The Effect of Health Worker Involvement in the Implementation of Shared Decision-Making on Improving Patient Understanding (Health Literacy)**

The active involvement of health workers in HR through *the Three-Talk Model* is believed to be the main determinant of patient understanding of their condition (Elwyn, 2017; Montori et al., 2023). When healthcare workers consistently engage patients in sharing information and considering therapy options, patients gain cognitive and relational space to process information actively, rather than passively as per paternalistic models (Sawyer & Opel, 2023). *Health literacy* is multidimensional

including cognitive, social, and relational aspects (Coughlin et al., 2020; Liu et al., 2020), so that the quality of health worker involvement also determines patients' understanding of their health information. Based on this relationship, the following hypothesis is formulated.

H₁: There is a significant influence between the involvement of health workers in the implementation of *Shared Decision-Making* on improving patient understanding (*health literacy*) in the Inpatient Ward of Dr. Moewardi Hospital Surakarta.

5. **The Influence of Shared Decision-Making Based Structured Communication Systems in Building a Personalized-Care-Based Patient Safety Culture**

Referring to the *Swiss Cheese Model*, communication failures are the vulnerability holes that most often penetrate the patient safety defense layer (Azyabi et al., 2021; Wiegmann et al., 2022). Structured communication systems such as SBAR and *bedside handover* standardize the delivery of medical information to minimize misinterpretation (Miloslavich et al., 2018), and have been shown to lower the incidence due to miscommunication (Thomas et al., 2019). When integrated with human resources, this system acts as a "patcher" of these vulnerability holes, reducing the risk of procedural errors, and encouraging the realization of *personalized-care* tailored to patient profiles (Gunawan et al., 2022). Based on this relationship, the following hypothesis is formulated.

Ha₂: A structured communication system based on *Shared Decision-Making* plays a significant role in building a *personalized care-based patient safety culture* in the Inpatient Ward of Dr. Moewardi Hospital Surakarta.

6. **The Effect of Patient Understanding of Medical Information (*Health Literacy*) on Strengthening Personalized-Care-Based Patient Safety**

The link *between health literacy and patient safety* has been widely documented: patients with *low health literacy* are more prone to mistreatment, less adherence to therapy, and more often experience preventable readmissions (Coughlin et al., 2020; Liu et al., 2020). Low *health literacy* creates a "blind spot" in the safety defense system, as patients lose their ability to act as the last layer of defense to prevent Unexpected Events (Azyabi et al., 2021). The concept of *personalized health literacy*, measured through the *teach-back technique* (Liu et al., 2020), positions *health literacy* as a crucial mediating variable that strengthens the strengthening of *personalized-care-based patient safety*. Based on this relationship, the following hypothesis is formulated.

Ha₃: Patients' understanding of medical information (*health literacy*) has a significant effect on strengthening *patient safety* based on *personalized-care* in the Inpatient Ward of Dr. Moewardi Hospital Surakarta.

METHODS

This study uses a *Mixed Methods Research* approach with a *Sequential Exploratory Design*. The selection of this design was based on the need to explore the phenomenon of clinical communication in depth through a qualitative approach first, which then the results were confirmed and the magnitude of their impact was measured statistically through a quantitative approach. The research procedural flow runs sequentially, starting from the phase of qualitative exploration, thematic analysis, instrument development, to quantitative confirmation and data integration.

The qualitative phase (exploration) uses a descriptive qualitative form to explore the real experiences of health workers (DPJP and implementing nurses), ward heads, and patients and families in the Inpatient Ward of Dr. Moewardi Surakarta Hospital. Qualitative data collection was carried out through *in-depth interviews* using semi-structured guidelines, passive participant observation of communication practices such as *bedside handover*, as well as documentation studies of medical records and Standard Operating Procedures. The determination of informants is carried out purposively until data saturation is *achieved*, which involves 11 main informants.

The findings from the qualitative phase were then analyzed thematically using the interactive analysis model of Miles, Huberman, and Saldaña which included data conditioning, data presentation, and conclusion drawn. The synthesis results of these qualitative findings were used to compile and develop quantitative questionnaire instruments to be truly contextual with the reality in the field. Furthermore, in the quantitative (confirmation) phase, data collection was carried out through a closed questionnaire survey on a Likert scale of 1–5 to 96 health worker respondents who were selected using *the proportionate stratified random sampling* technique.

The collected quantitative data were analyzed through descriptive statistical tests, analytical prerequisites tests (normality and linearity), as well as bivariate inferential tests and mediation tests (*Sobel Test*) to test causal relationships and the mediating role of patient understanding (*health literacy*) on patient safety). This entire set of integrated methods allows researchers to gain a comprehensive understanding while generating a valid strategic foundation for hospital management.

The results of the validity test showed that all 36 items from the three variables were declared valid because the value was above (0.201), with a value range of 0.709 to 0.866, so that all items could be used without any falls. In addition, the results of the reliability test showed a very high Cronbach's Alpha value on all three variables, namely variable X of 0.962, variable Y1 of 0.939, and variable Y2 of 0.961, which indicates that the research instrument has excellent internal consistency and is suitable for testing hypotheses.

RESULTS AND DISCUSSION

Results

Qualitative Research Results

Implementation of Structured Communication System Based on Shared Decision-Making

The results of interviews with the DPJP group and the implementing nurses (Guide A) show that the SBAR (*Situation, Background, Assessment, Recommendation*) format has been formally applied to the shift handover process, but the consistency of implementation is still low, especially in the night shift, with *elements of Assessment and Recommendation* which is most often skipped due to time constraints. This was revealed by the following informants. Informant A1 admitted that information during the pass was often cut off due to the rushed situation.

"We have used the SBAR format, but to be honest, during the night shift to the morning, sometimes the information is cut off because it is in a hurry. We rarely invite patients directly to the operative session; at best we tell the family who happens to be there." (Informant Interview A1/07/04/2026)

A similar statement was expressed by Informant A2, who emphasized that the completeness of filling out SBAR between nurses has not been consistent.

"SBAR already has a format, but not all nurses consistently fill it out completely. Sometimes the Assessment and Recommendation section is skipped because time is short. Patients usually just listen, haven't really been engaged." (Informant Interview A2/08/04/2026)

The same thing was also conveyed by Informant A3 and Informant A5, who each highlighted the lack of supervision of SBAR compliance and the variation in consistency between shifts.

"I am still relatively new, and I notice that there is no direct supervision of SBAR. Bedside handovers are sometimes done outside the room, not on the patient's side. The reason is not to disturb the patient to rest." (Informant Interview A3/09/04/2026)

"SBAR has formally been running, but I think the consistency between shifts is still different. Night shifts tend to be the weakest due to staff limitations." (Informant Interview A5/11/04/2026)

The *bedside handover process* also does not really actively involve the patient; most of it is done outside the patient's room for the reason that they do not want to interfere with the patient's rest time. This was also confirmed by Informant B1 in terms of supervision of the head of the room.

"I do direct supervision at least once a week, but frankly this is not enough. There is no digital monitoring system that allows me to monitor SBAR compliance in real-time. The evaluation is still very manual." (Informant Interview B1/14/04/2026)

The implementation of *Shared Decision-Making through the Three-Talk Model (Team Talk, Option Talk, Decision Talk)* was found to do not have a standard written protocol; its implementation is highly dependent on the initiative and personal habits of each health worker. This was conveyed by the following A4 Informant.

"I try to give patients a choice, for example between two types of therapy, but the time is very limited. In a busy state, I don't have enough time for in-depth discussions with patients." (Informant Interview A4/10/04/2026)

In line with that, Informant A5 also admitted that the implementation of human resources in the ward is still personal.

"I understand human resources in theory, but there is no written protocol that operationalizes them in this ward. I apply it personally depending on the condition and type of patient." (Informant Interview A5/11/04/2026)

This was also confirmed by the side of the head of the ward room, who stated that in writing there is no SOP that explicitly regulates the active involvement of patients in therapy decision-making, and the existing patient involvement encouragement is still verbal direction.

"In writing, there is no SOP that explicitly regulates Shared Decision-Making or the active involvement of patients in therapy choices. There is only a standard SOP informed consent." (Informant Interview B1/14/04/2026)

"I encourage staff to engage patients, but that's more based on verbal direction from me, not written policy. So, the implementation depends on the individual of each staff." (Informant Interview B2/15/04/2026)

In addition, the *informed consent process* is considered to be an administrative formality: patients sign forms without an adequate understanding of the treatment options and the risks, especially in patients with long-term therapies such as corticosteroids. This was acknowledged by Informant A3.

"There is no SOP that explicitly regulates patient involvement in decision-making. All there is informed consent before action, even if it is more about signing documents." (Informant Interview A3/09/04/2026)

From the point of view of patients and families (Guide C), these findings are reinforced through their direct experiences of receiving medical information. Explanations from health workers are felt to be too fast and full of medical terms that are difficult to understand, so patients are reluctant to ask questions and seek information themselves from other sources. This was revealed by the following C1 Informant.

"The doctor is good, but the explanation is very fast. I often don't understand the medical terms. I was afraid to ask questions for fear of disturbing. So, I'll find out for myself on the internet." (Informant Interview C1/18/04/2026)

A similar statement was also expressed by Informant C3.

"Frankly, I find it difficult to understand that doctors use unusual terms. I understand better if it is explained in everyday language. Sometimes I just grumble when it's not really clear." (Informant Interview C3/19/04/2026)

Patient involvement in choosing therapy options was also found to be very minimal; The majority of informants stated that they were never offered treatment options and left the decision entirely to the doctor. This was conveyed by the following Informants C1, C3, and C4

"I was never offered treatment options. The doctor immediately said this is the medicine, this is the dose. I signed the consent letter but didn't really understand all the contents." (Informant Interview C1/18/04/2026)

"I was never asked about choices. I just follow what the doctor says. I believe the doctor knows better. My family has also never discussed treatment plans." (Informant Interview C3/19/04/2026)

"In my opinion, the informed consent process is still very formal. The form is long and full of medical terms. We were told to sign quickly. There is no time to read or ask questions freely." (Informant Interview C4/20/04/2026)

Inconsistencies in information received from different professions or shifts also cause confusion, as experienced by the families of patients who receive different information from morning doctors and afternoon nurses.

"My mother has been treated here several times. In general, the explanation is good. But once, the information from the morning doctor and the afternoon nurse was different, so I was confused which one was correct." (Informant Interview C4/20/04/2026)

Barriers for Health Workers in Implementing Structured Communication to Improve Patient Understanding

Healthcare workers consistently report that patient education becomes a marginalized priority when workloads are high, so communication turns transactional and simply the delivery of instructions. This was revealed by the following A1 Informant.

"Often patient education time is shifted by administrative tasks and clinical actions. If the nurse-patient ratio is not ideal, the shifted communication is the first to be compensated." (Informant Interview A1/07/04/2026)

A similar statement was conveyed by Informant A2.

"The high workload makes communication very transactional, just delivering instructions. There is no room to listen to patients' concerns in depth." (Informant Interview A2/08/04/2026)

The average visit time available for each patient is only around 3–5 minutes, considered inadequate to conduct meaningful HR discussions, especially in patients with chronic and complex conditions such as SLE and *Rheumatoid Arthritis*. This was acknowledged by Informant A4.

"I usually allocate educational time at the beginning of the morning visit, but if there are many patients, per patient it may be only 3-5 minutes. That's not enough for meaningful HR discussions." (Informant Interview A4/10/04/2026)

Regional language barriers, especially Javanese in elderly patients, also worsen the effectiveness of the education provided, as revealed by the following A4 Informant.

"The language barrier is real. There are elderly patients who can only communicate in Javanese, and not all staff are fluent. This makes education very limited." (Informant Interview A4/10/04/2026)

The administrative burden of filling out CPPT and accreditation documents is also reported to take up time that should be allocated for therapeutic communication with patients. This was conveyed by Informant A5.

"I admit that this is a real problem. Administrative burdens such as filling out CPPT and accreditation documents take time that should be used for communication with patients." (Informant Interview A5/11/04/2026)

In terms of system and policy support, it was found that clinical communication training received by health workers is still limited and has not been updated for a long time, with material that focuses more on SBAR between health workers than on human resource communication with patients. This was admitted by Informants A1, A2, and A3.

"The last clinical communication training I received was about two years ago, and it was more about SBAR communication between health workers, not HR communication with patients." (Informant Interview A1/07/04/2026)

"There are no decision aids provided by the hospital to be used during patient education. We use generic leaflets that are not always relevant to the patient's specific condition." (Informant Interview A2/08/04/2026)

"I have never received any special training on Shared Decision-Making. I even just got to know the term Three-Talk Model from a self-guided seminar outside the hospital." (Informant Interview A3/09/04/2026)

The head of the ward also confirmed that the most significant structural obstacles are the sub-ideal nurse-patient ratio, high documentation burden, and the absence of structured and continuous human resource training, while supervision of compliance with communication protocols is still carried out manually and not routinely. These findings align with prior studies showing that limited supervisory time, inconsistent understanding of instructions, and weak reporting communication hinder policy implementation, and that improvements require scheduled supervision, communication training, and feedback mechanisms (Nugraha & Jarkasih, 2024).

"The three biggest obstacles I see are: first, the nurse-patient ratio is still less than ideal; second, a very high burden of documentation; and third, there is no structured and sustainable human resource training." (Informant Interview B1/14/04/2026)

"I think the biggest obstacle is the system, not the individual. Our staff actually wanted to, but the system didn't support it. There is no time allocated specifically for communication with patients outside of clinical procedures." (Informant Interview B2/15/04/2026)

The patient's and family's perceptions also illustrate the impact of these barriers on their level of understanding. The level of *health literacy* of patients was found to vary quite widely, with younger and more educated patients tending to be more active in seeking information independently, while elderly patients were highly dependent on verbal explanations from health workers. This can be seen from the following statements of Informants C1 and C3.

"I understand the name of my disease, SLE. But for the side effects of long-term corticosteroid medications, I don't really understand the risks. I just found out from a community group of SLE patients on social media." (Informant Interview C1/18/04/2026)

"What is still confused is about food restrictions. I get different info from doctors, nurses, and family. In the end, I wasn't sure which one to go with." (Informant Interview C3/19/04/2026)

Information about long-term drug side effects, especially corticosteroids in patients with SLE and *Rheumatoid Arthritis*, is considered inadequately explained by health workers, so patients actually obtain this information from online communities. This was also acknowledged by Informant C2.

"The purpose of the drugs has been partly explained, but not all. There are some medications that I take every day but don't know what they do. I'm embarrassed to keep asking." (Informant Interview C2/17/04/2026)

Patients and families also explicitly identified the need for personalized and re-readable written educational media at home.

"The doctor's explanation is enough, but sometimes I forget because there is too much information at once. I wish there was something written or a brochure that I could take home." (Informant Interview C2/17/04/2026)

"The explanation is not bad, but I want something to be written, not just verbal. Because if it's oral, later at home you'll have forgotten. Moreover, my elderly mother has a hard time remembering." (Informant Interview C4/20/04/2026)

The Role of Structured Communication in Building a *Personalized-Care-Based Patient Safety Culture*

Almost all informants from the Guide A group stated that the root of the problem of the incident or Near Injury Incident (KNC) they encountered almost always had an element of communication failure, both between health workers and between health workers and patients. This was revealed by the following informants.

"There have been cases where patients almost got the wrong medication because the patient's name was similar. It was revealed precisely because the patient himself asked, 'Is this medicine for me?'. The patient saves himself." (Informant Interview A1/07/04/2026)

"I know that there are some KNCs who are not reported to the safety committee for fear of being blamed. The blame culture is still quite thick. The reports that come in are only a fraction of the actual incidents." (Informant Interview A2/08/04/2026)

"I myself was hesitant to report because I didn't know the procedure clearly and was worried that there would be consequences. In the end, it was only recorded by itself, not officially reported." (Informant Interview A3/09/04/2026)

"The root of the problem of the incidents that I encountered almost always has an element of incomplete communication, either between health workers, or between health workers and patients. This confirms the importance of a structured communication system." (Informant Interview A4/10/04/2026)

"After an incident, there is usually an informal discussion, but it rarely leads to a change in the written SOPs. The response is more reactive than systemic." (Informant Interview A5/11/04/2026)

The culture of incident reporting was found to be still thick with a *culture of blame*, where health workers were reluctant to report KNC because they were worried that the report would be associated with performance appraisals, so that the number of official reports was believed to be much lower than the actual incident in the field. This is reinforced by the following statement of the head of the ward room.

"Honestly, I have to admit, there is still a culture of fear of reporting among staff. They are worried that incident reports will be directly linked to their performance appraisals. This makes the KNC report number far below the actual incident." (Informant Interview B1/14/04/2026)

"The reporting system already exists formally, but the follow-up is not optimal. Staff don't feel any noticeable change after the report is made, so they become apathetic to report again." (Informant Interview B2/15/04/2026)

On the other hand, there is also clear evidence that patients who are active and have a good understanding of their condition can act as an additional layer of defense in preventing Unexpected Events (KTD). This was conveyed by the following Informants A1, A2, and A4.

"Patients who are active and understand their condition are an additional layer of defense that is very valuable. They can detect anomalies that sometimes escape the attention of exhausted health workers." (Informant Interview A1/07/04/2026)

"I have had patients report that the medicine is different in color than usual. It turns out that there is indeed a shipping error from the pharmacy. If the patient is inactive, the incident can occur." (Informant Interview A2/08/04/2026)

"When patients understand the red flags, such as in SLE patients who know when to report to a nurse immediately, it significantly helps prevent the worsening of conditions that can lead to KTD." (Informant Interview A4/10/04/2026)

Personalized-care itself was found to be conceptually understood by health workers, but its implementation still depends heavily on individual initiative and has not become a measurable system standard, because there is no formal guidance that regulates communication adjustments based on patient profiles.

"Personalized-care in communication means that we adjust the way and depth of explanation to the patient's profile. Elderly patients need a different approach from young patients who are tech-savvy. There are currently no formal guidelines for that." (Informant Interview A5/11/04/2026)

"Personalized-care for me means that we tailor care and communication to the unique needs of each patient. Ideally, we have understood that, but implementation is still highly dependent on individual staff initiatives and has not yet become a standard system." (Informant Interview B1/14/04/2026)

"We already have several examples of good practices, for example nurses who proactively pay attention to elderly patients with communication limitations. But it's not consistent across the staff because there hasn't been any formal guidance." (Informant Interview B2/15/04/2026)

From the perspective of patients and families, personalization of care is felt to have not been realized systemically. The patient's social and economic condition has never been explored by health workers as a consideration in developing a treatment plan, even though these factors directly affect the patient's adherence to therapy.

"No one ever asked about my living conditions at home. Even though my socioeconomic condition affects my ability to buy medicine and regular control." (Informant Interview C3/19/04/2026)

However, some informants reported positive experiences of *personalized-care* when they had health workers individually take the time to explain in easy-to-understand language, confirming that the quality of *personalized-care* today is determined more by personal initiative than by standardized systems.

"I once experienced a truly personal treatment when the nurse explained the side effects of the mother's medication in easy-to-understand language, while sitting down and not rushing. That's the most memorable." (Informant Interview C4/20/04/2026)

Quantitative Research Results

Descriptive Statistical Analysis

Table 1. Descriptive Statistics of Research Variables

Variable	Mean	SD	Min	Max	Category
HR-Based Structured Communication System (X)	3,59	0,76	1,73	4,93	Medium

Patient Understanding/Health Literacy (Y1)	3,48	0,78	2,00	5,00	Medium
Patient Safety Berbasis Personalized-Care (Y2)	3,52	0,84	1,50	5,00	Medium

Based on the table above, the three research variables are in the medium category, with mean values ranging from 3.48 to 3.59. Variable X (mean = 3.59) had the highest average value among the three, followed by Y2 (mean = 3.52) and Y1 (mean = 3.48). The relative mean values between these three variables are descriptively consistent with the theoretical framework of the research that positions X, Y1, and Y2 as interrelated constructs in a series of causal processes ($X \rightarrow Y1 \rightarrow Y2$). The moderate category values in the three variables indicate that the implementation of structured communication, patient understanding levels, and personalized-care-based patient safety conditions in the inpatient ward of Dr. Moewardi Surakarta Hospital are not optimal, as well as confirming qualitative findings that also describe conditions that are still in the developmental stage and require systemic strengthening.

Classic Assumption Test

Normality Test

Table 2. Normality Test Results

Variable	N	Statistic (KS)	Sig.	Description
HR-Based Structured Communication System (X)	96	0,068	0,200	Normal
Patient Understanding/Health Literacy (Y1)	96	0,083	0,105	Normal
Patient Safety Berbasis Personalized-Care (Y2)	96	0,114	0,245	Normal

Based on the table above, the three variables have significance values that are well above 0.05 (X: $p = 0.200$; Y1: $p = 0.105$; Y2: $p = 0.114$), so that all data is normally distributed. The assumption of normality is met, so that inferential analysis using parametric statistics (linear regression) can be continued.

Linearity Test

Table 3. Linearity Test Results

Variable Relationships	Test	F	Sig.	Description
$X \rightarrow Y1$	Deviation from Linearity	1,133	0,330	Linear
$X \rightarrow Y2$	Deviation from Linearity	0,913	0,611	Linear
$Y1 \rightarrow Y2$	Deviation from Linearity	1,194	0,279	Linear

Based on the table above, all pairs of variable relationships have a significance value of Deviation from Linearity that is well above 0.05 ($X \rightarrow Y1$: $p = 0.330$; $X \rightarrow Y2$: $p = 0.611$; $Y1 \rightarrow Y2$: $p = 0.279$), so that the relationship between the three variables can be stated to be linear. The assumption of linearity is met.

Uji Hypothesis

Hypothesis Q1

Table 4. Results of Simple Linear Regression $X \rightarrow Y1$ (Q1)

	B (Unstd.)	SE	Beta (Std.)	t	p
Konstanta	10,460	2,773	,	3,932	<0,001
$X \rightarrow Y1$ (Line A)	0,379	0,050	0,614	7,533	<0,001

Based on the table above, variable X has a significant effect on Y1 ($B = 0.379$; $SE = 0.050$; $\beta = 0.614$; $t = 7.533$; $p < 0.001$). Thus, H1 is rejected: there is a positive and significant influence of HR-Based Structured Communication Systems on Patient Understanding/Health Literacy. Each increase of one unit of X score is associated with an increase of 0.379 units of Y1 score.

Hypothesis Q2

Mediation effect testing was carried out through the three-step approach of Baron and Kenny (1986), which was complemented by the Sobel Test to verify the significance of indirect effects.

Step 1: Line c (total effect of $X \rightarrow Y2$ before $Y1$ is controlled). The simple regression result of $X \rightarrow Y2$ showed a coefficient $B = 0.406$ ($t = 4.968$; $p < 0.001$), confirming that X had a significant effect on $Y2$ directly before the mediator ($Y1$) was incorporated into the model.

Step 2: Pathway a ($X \rightarrow Y1$) was tested in Q2, with a result $B = 0.379$ ($p < 0.001$).

Step 3: Path b and path c' are tested simultaneously through multiple regression with $Y1$ and X as co-predictors of $Y2$. The results are presented in Table IV.21 below.

Table 5. Multiple Regression Results $X + Y1 \rightarrow Y2$ (Q3 Mediation Test)

	B (Unstd.)	SE	Beta (Std.)	t	p
Konstanta	3,957	3,761	,	1,052	0,295
$X \rightarrow Y2$ (Line C', with $Y1$)	0,102	0,091	0,115	1,125	0,264
$Y1 \rightarrow Y2$ (Line B, with X)	0,803	0,146	0,557	5,481	0,000

Based on the table above, after $Y1$ was incorporated into the model, the direct path coefficient $X \rightarrow Y2$ (line c') decreased drastically from $B = 0.406$ to $B = 0.102$, and was no longer significant ($t = 1.125$; $p = 0.264 > 0.05$). In contrast, the b pathway ($Y1 \rightarrow Y2$ with X controlled) remained significantly strong ($B = 0.803$; $t = 5.481$; $p < 0.001$). The R^2 value of the mediation model of 0.401 indicates that the combination of X and $Y1$ explains 40.1% of the $Y2$ variance, greater than that of the model without a mediator ($R^2 = 0.208$).

To verify the statistical significance of the indirect effect ($a \times b$), the Sobel Test was performed manually using the formula: $z = (a \times b) / \sqrt{(b^2 Sa^2 + a^2 Sb^2)}$. The results of the Sobel Test are presented in Table 6 below.

Table 6. Results of Sobel Test $Y1$ Mediation Effect on Pathway $X \rightarrow Y2$

Line	Coefficient (a/b)	SE	Indirect Effect ($a \times b$)	z-Sobel	p
Line a: $X \rightarrow Y1$	0,379	0,050			
Line b: $Y1 \rightarrow Y2$ (X controlled)	0,803	0,146			
Indirect Effect $X \rightarrow Y1 \rightarrow Y2$	,	0,069	0,304	4,432	0,000

Based on table 6, the indirect effects of $X \rightarrow Y1 \rightarrow Y2$ resulted in a z-Sobel value = 4.432 ($p < 0.001$), which means that the mediating effect of $Y1$ on the $X \rightarrow Y2$ pathways is statistically significant. Referring to Baron and Kenny's (1986) criteria: (1) pathway c (total effect $X \rightarrow Y2$) significant; (2) path a ($X \rightarrow Y1$) significant; (3) path b ($Y1 \rightarrow Y2$ after X is controlled) significantly; and (4) the c' pathway ($X \rightarrow Y2$ after $Y1$ is controlled) is insignificant, so it can be concluded that $Y1$ is a full mediator of the influence of $X \rightarrow Y2$. Thus, H_{03} is rejected: Patient Understanding/Health Literacy ($Y1$) is statistically proven to fully mediate the influence of HR-Based Structured Communication Systems (X) on Personalized-Care ($Y2$)-Based Patient Safety.

Hypothesis Q3

Table 7. Results of Simple Linear Regression $Y1 \rightarrow Y2$ (Q3)

	B (Unstd.)	SE	Beta (Std.)	t	p
Konstanta	13,946	3,719	,	3,750	<0,001
$Y1 \rightarrow Y2$ (Line b_1)	0,904	0,116	0,627	7,805	<0,001

Based on table 7, the $Y1$ variable has a significant effect on $Y2$ ($B = 0.904$; $SE = 0.116$; $\beta = 0.627$; $t = 7.805$; $p < 0.001$). Thus, H_{01} is rejected: there is a positive and significant influence of Patient

Understanding/Health Literacy on Personalized-Care-Based Patient Safety. Each increase of one unit of Y1 score is associated with an increase of 0.904 units of Y2 score.

Discussion

All groups of informants in the Inpatient Ward of Dr. Moewardi Surakarta Hospital show that the structured communication system is only running at the formal-administrative stage and has not been internalized as a participatory work culture. The SBAR and Three-Talk HR Model formats have been widely recognized by healthcare workers, but the consistency of their implementation has declined sharply when faced with night shifts or high workloads. Descriptive statistical analysis strengthens these qualitative findings because the HR-Based Communication System Variable recorded the highest mean of 3.59, while the Three-Talk Model dimension was at the lowest point with a mean of 3.50. A positive and significant influence on Patient Understanding is evident through regression coefficients and (), which show that communication quality accounts for 37.6% variation in patient understanding levels. Miloslavich et al. (2018) assert that unstructured communication triggers fragmentation of care during the care transition, while Elwyn (2017) together with Montori et al. (2023) explain that Shared Decision-Making requires three successive stages ranging from Team Talk to Decision Talk, so that obstacles in the early stages automatically disrupt the participatory essence of caregiving. $\beta = 0,614R^2 = 0,376p < 0,001$

The structural barriers faced by health workers include the duration of visits that only range from 3 to 5 minutes as well as the administrative burden that accumulates, making patient education the most frequently sacrificed component. The ward head confirmed that this obstacle is systemic and exacerbated by the limitations of clinical training which has so far only focused on SBAR without the availability of adequate decision aids. This condition has direct implications for the Patient Understanding Variable score, which only recorded a mean of 3.48 as the lowest number among all research variables. WHO (2021) states that persistent communication failures stem from system design that fails to allocate adequate time, while Nutbeam (2000) and Liu et al. (2020) underline that patient health literacy is the result of the suitability of system information delivery with individual receptive capacity. Waddell et al. (2021) added that the misalignment between administrative documents and the need for clinical discussion time is a consistent global barrier found in the implementation of Shared Decision-Making in various healthcare facilities.

Groups of managerial informants and health workers identified communication failures as the root cause of various safety incidents in the field, exacerbated by a culture of blame that reluctantly reluctance for health workers to report Near Injury Incidents officially. Empirical findings prove that Patient Understanding has a very strong positive influence on Personalized-Care-Based Patient Safety with a value of (). The results of the Sobel Test confirmed the occurrence of full mediation through the number () and an indirect effect of 0.304, which indicates that the improvement of communication between health workers will not have an optimal impact without the formation of patient understanding first. Wiegmann et al. (2022) updated the Swiss Cheese Model by placing communication failures as the most dominant hole in the hospital's defense layer. Liu et al. (2024) complemented the framework by proving that well-informed patients act as an active defense layer that monitors the course of treatment on an ongoing basis. Najihah et al. (2018) documented a similar phenomenon in various Indonesian hospitals where official incident reporting rates remained low due to the shadow of administrative sanctions, while Gunawan et al. (2022) warned that inaccurate data hinder fundamental system improvement. $\beta = 0,627R^2 = 0,393p < 0,001z = 4,432p < 0,001$

The integration of clinical communication protocols in the ward requires an overhaul of institutional policies that do not just rely on the individual awareness of health workers in conveying care information. The absence of personalized written educational media and the dominance of generic leaflets make it difficult for elderly patients with regional language barriers to grasp medical instructions in their entirety.

Leotin (2025) suggests a reformulation of communication based on Human-Centered Design through personalization of educational formats to reduce sentinel incidents due to information failure. Gultom and Basabih (2025) reinforce this argument by showing that poor interdisciplinary coordination during the inpatient transition is a major obstacle in maintaining overall patient safety. Statistical testing proved that the remaining variance of 62.4% in the patient's understanding variable was influenced by external factors such as education level and age, so that the generic educational approach proved no longer relevant to be applied in modern healthcare facilities.

The implementation of informed consent in hospitals is often reduced to a mere administrative formality without a meaningful discussion process about the risks and alternatives to long-term therapy for patients. Spatz et al. (2016) assert that the standard of medical consent must shift from simply a condition that has been notified to a level of understanding that the recipient actually masters. Coughlin et al. (2020) noted that the teach-back method has been shown to be effective in significantly boosting patient understanding, but requires structured training for all medical personnel so that the implementation is not partial. The results of the field findings show that the absence of a specific SOP for the Three-Talk Model makes the nurses and doctors in charge of services work based on their own personal instincts. This situation triggers inconsistencies in information between guard shifts that risk confusing the patient's family when receiving daily medical explanations.

The culture of incident reporting that is still reactive-informal reflects the lack of a safe psychological safety climate for medical workers in the hospital environment. Azyabi et al. (2021) found that the quality of interdisciplinary communication was directly correlated with a statistically reduced number of Unexpected Events in various primary and secondary service facilities. Strengthening the patient's role as a safety partner requires the availability of humane visit times and documentation infrastructure support that eases the administrative burden on nurses. The involvement of patients in the process of developing a daily care plan will ensure that their socio-economic aspects are well accommodated into electronic medical records. These systemic improvements are collectively able to change the orientation of services from simply fulfilling administrative targets to achieving patient safety centered on personalizing care.

CONCLUSION

The implementation of a structured communication system based on *Shared Decision-Making* is still not optimal due to inconsistencies in SBAR on night shifts, lack of patient involvement during *bedside handover*, and the absence of written SOPs for *the Three-Talk Model*. Health workers also face layered structural barriers such as limited visit time and administrative documentation burdens that have a direct impact on low levels of patient understanding (*health literacy*). Structured communication has proven to play a significant role in building a *personalized-care-based* patient safety culture, where patient understanding acts as a full mediator linking the quality of communication with the strengthening of an active defense layer to prevent Unexpected Events (KTDs).

REFERENCES

- Azyabi, A., Karwowski, W., & Davahli, M. R. (2021). Assessing Patient Safety Culture in Hospital Settings. *International Journal of Environmental Research and Public Health*, 18(5), 1–36. <https://doi.org/10.3390/IJERPH18052466>
- Coughlin, S. S., Vernon, M., Hatzigeorgiou, C., & George, V. (2020). Health Literacy, Social Determinants of Health, and Disease Prevention and Control. *Journal of Environment and Health Sciences*, 6(1), 3061. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7889072/>

- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and Conducting Mixed Methods Research* (3rd ed.). SAGE Publications.
- Fadhilah, K. M., Hidayat, D., & Rohendi, A. (2025). ANALISIS KEMUDAHAN DAN PENERIMAAN PENGGUNAAN REKAM MEDIS ELEKTRONIK (RME) DI INSTALASI RAWAT JALAN RSUD DR. SOEDONO MADIUN : TECHNOLOGY ACCEPTANCE MODEL. *JURNAL PENELITIAN TERAPAN KESEHATAN*, 12(1), 23–33. <https://doi.org/10.33088/JPTK.V12I1.971>
- Gunawan, R., Arief, Y. S., & Kusnanto, K. (2022a). Analysis of factors affecting the implementation of patient safety incident reporting in Indonesian hospitals. *Jurnal Ners*, 17(1), 55–62. <https://doi.org/10.20473/jn.v17i1.32567>
- Liu, C., Wang, D., Liu, C., Jiang, J., Wang, X., Chen, H., Ju, X., & Zhang, X. (2020). What is the meaning of health literacy? A systematic review and qualitative synthesis. *Family Medicine and Community Health*, 8(2). <https://doi.org/10.1136/FMCH-2020-000351>
- Liu, Y., Yang, Y., Jia, C., Shi, Z., Liu, Y., Yang, Y., Jia, C., & Shi, Z. (2024). The Application Progress of Swiss Cheese Model in Safety Management of Nursing Care. *Journal of Biosciences and Medicines*, 12(12), 402–410. <https://doi.org/10.4236/JBM.2024.1212032>
- Mardianti, F. (2025). The role of interpersonal communication in employee relationships. *Finance and Business Management Journal*. <https://ejournal.unma.ac.id/index.php/fbmj/article/view/16902>
- Made, D. S. I., Hidayat, D., & Santoso, B. (2025). Mixed Methods Exploratory Study: Analisis Penerapan Budaya Keselamatan Pasien. *ProHealth Journal*, 22(2), 96–112. <https://doi.org/10.59802/PHJ.2025222184>
- Miloslavich, P., Bax, N. J., Simmons, S. E., Klein, E., Appeltans, W., Aburto-Oropeza, O., Andersen Garcia, M., Batten, S. D., Benedetti-Cecchi, L., Checkley, D. M., Chiba, S., Duffy, J. E., Dunn, D. C., Fischer, A., Gunn, J., Kudela, R., Marsac, F., Muller-Karger, F. E., Obura, D., & Shin, Y. J. (2018). Essential ocean variables for global sustained observations of biodiversity and ecosystem changes. *Global Change Biology*, 24(6), 2416–2433. <https://doi.org/10.1111/GCB.14108>
- Montori, V. M., Ruissen, M. M., Hargraves, I. G., Brito, J. P., & Kunneman, M. (2023). Shared decision-making as a method of care. *BMJ Evidence-Based Medicine*, 28(4), 213–217. <https://doi.org/10.1136/BMJEBM-2022-112068>
- Murtini, N. (2026). Business communication strategies in building a positive image of hospitals in the era of healthcare competition: Study at Djuansih Majalengka Hospital. *Finance and Business Management Journal*, 4(1), 1–14. <https://ejournal.unma.ac.id/index.php/fbmj/article/view/17254>
- Najihah, N. (2018). BUDAYA KESELAMATAN PASIEN DAN INSIDEN KESELAMATAN PASIEN DI RUMAH SAKIT: LITERATURE REVIEW. *Journal of Islamic Nursing*, 3(1), 1–8. <https://doi.org/10.24252/JOIN.V3I1.5469>
- Nugraha, A. G., & Jarkasih, A. (2024). Division head supervision and employee performance at the Majalengka Regency Transportation Agency. *Finance and Business Management Journal*, 2(2), 126–135. <https://www.ejournal.unma.ac.id/index.php/fbmj/article/view/19524>
- Sawyer, K. E., & Opel, D. J. (2024). Shared Decision-Making in Pediatrics. *Pediatric Clinics of North America*, 71(1), 39–48. <https://doi.org/10.1016/j.pcl.2023.08.001>
- Scheibler, F., Geiger, F., Wehkamp, K., Danner, M., Debrouwere, M., Stolz-Klingenberg, C., Schuldt-Joswig, A., Sommer, C. G., Kopeleva, O., Bünzen, C., Wagner-Ullrich, C., Koch, G., Coors, M., Wehking, F., Clayman, M., Weymayr, C., Sundmacher, L., & Rüffer, J. U. (2024). Patient-reported effects of hospital-wide implementation of shared decision-making at a university medical centre in Germany: a pre-post trial. *BMJ Evidence-Based Medicine*, 29(2), 87–95. <https://doi.org/10.1136/BMJEBM-2023-112462>

-
- Spatz, E. S., Krumholz, H. M., & Moulton, B. W. (2016). The New Era of Informed Consent: Getting to a Reasonable Patient Standard through Shared Decision Making. *JAMA*, 315(19), 2063. <https://doi.org/10.1001/JAMA.2016.3070>
- Veranita, M., Birowo, A., & Mirawati, L. (2023). Strategi manajerial dalam upaya mempertahankan retensi dokter spesialis: Studi kualitatif di Rumah Sakit Islam Pati. *KJPKM (Kawanad Journal of Public Health)*, 1(1), 1–10.
- Waddell, A., Lennox, A., Spassova, G., & Bragge, P. (2021). Barriers and facilitators to shared decision-making in hospitals from policy to practice: a systematic review. *Implementation Science : IS*, 16(1), 74. <https://doi.org/10.1186/S13012-021-01142-Y>
- Wiegmann, D. A., Wood, L. J., Cohen, T. N., & Shappell, S. A. (2022). Understanding the “Swiss Cheese Model” and Its Application to Patient Safety. *Journal of Patient Safety*, 18(2), 119. <https://doi.org/10.1097/PTS.0000000000000810>
- Yanti, K. J., Hidayat, D., & Widjaja, Y. R. (2024). TINGKAT EFISIENSI PENGGUNAAN SISTEM REKAM MEDIS ELEKTRONIK DI RSUP DR. KARIADI SEMARANG. *Journal of Social and Economics Research*, 6(2), 682–703. <https://doi.org/10.54783/JSER.V6I2.670>