

## Design of Digital-Based SBAR Communication Application in Handover Implementation at Undata Hospital, Central Sulawesi Province

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ARTICLE INFO	ABSTRACT
<p><b>Manuscript Received:</b> 29 Sept, 2024  <b>Revised:</b> 7 Nov, 2024  <b>Accepted:</b> 16 Nov, 2024  <b>Date of Publication:</b> 9 Dec, 2024  <b>Volume:</b> 7  <b>Issue:</b> 12  <b>DOI:</b> <a href="https://doi.org/10.56338/mppki.v7i12.6316">10.56338/mppki.v7i12.6316</a></p>	<p><b>Background:</b> Effective communication could be done by SBAR method, by SBAR communication could be used by health team members while doing handover to other teams. The main communication failure toward nurse is the lack of communication among providers that supports that the handover process is very important in health care. Currently, not all staff nurses know what kind of data should be reported during handover. In answering the problems found, it is necessary to perform digital-based SBAR so as to ensure the completeness of documentation, as well as improve nursing services and patient safety. The purpose of this study was to design a digital-based SBAR communication application in handover implementation at Undata Hospital, Central Sulawesi Province.</p> <p><b>Methods:</b> The type of research is qualitative research with the research and development method, which is a method used to produce a particular product.</p> <p><b>Results:</b> Qualitative research to explore the SBAR form as the initial part of designing a web-based management information system in order to increase the effectiveness of communication during the handover process, through data with input, process and output activities in the handover process at Undata General Hospital, Central Sulawesi Province.</p> <p><b>Conclusion:</b> Nursing services at Undata General Hospital of Central Sulawesi Province require applications in conducting nursing documentation so that handovers between nurses and other health teams could be done effectively. This SBAR communication design is expected to be further developed into an application development that implemented in hospitals.</p>
KEYWORDS	
<p>SBAR; Handover; Communication; Digital</p>	

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### INTRODUCTION

Communication between health workers is an important part of collaborative practice in health care. Lack of communication could lead delays in serving patients and errors in treating patients. Ineffective communication can also illustrate the poor coordination of health workers. Communication is sometimes only in the form of orders and data confirmation without any discussion and knowledge transfer as well (1). Effective communication can be done by SBAR method (Situation, Background, Assessment, Recommendation), the SBAR communication can be used by health team members when reporting the patient conditions to other teams so as to improve patient safety. This illustrates that effective SBAR communication to make it easier for nurses in providing information related to patient health because this communication is structured and clear about reporting of patient conditions that could prevent errors in providing care to patients (2).

Effective communication by using SBAR could improve client safety in hospitals, this is in accordance with case reports by JCI and WHO that about 25,000-30,000 permanent disabilities toward patients in Australia which

11% are due to communication failures. Patient safety incident reports (PSI) in Indonesia based on hospitals that reported had increase from 2017-2019, which had 3% of incident, in 2018 it was 5% and in 2019 it was 12%. Based on hospital reporting in Indonesia in 2019, the highest incidence was in Bali Province about 38% and the lowest in North Sumatra Province at 0,5%<sup>3</sup>. The importance of structured communication in hospitals is not only related to the technical aspects of patient care, but also has a direct impact on the safety and quality of care provided (4). Effective communication can strengthen synergy among members of the team care, reduce the risk of misdiagnosis and ensure rapid response to changes in the patient's condition. Therefore, the implementation of SBAR is not just an administrative step but a strategic investment in improving health care standards and ensuring patient safety and well-being (5).

Communication can threaten patients but also can prevent patients from health threats. Communication is the basis for ensuring that patients receive good care, explaining treatment goals and discussing patient care with other involved professionals. Communication often takes place in situations of high stress and urgency, but communication is also a means to solve these situations, because by good communication could achieve be good team collaboration (6). Effective communication in professional nursing practice is a great element for nurses in performing nursing care in achieving optimal results. One of the nursing activities that require effective communication is during handover and telephone communication. Telephone communication is verbal communication done if according to the nurse that the patient's condition requires medical intervention, which telephone consultation is one of implementation of reporting the patient's condition to the doctor. For verbal or telephone orders, the nurse who receives the message must write it down and read it back to the messenger and the next day the doctor in charge of the client provides the confirmation (7).

The National Hospital Accreditation Standard explains that patient safety goals require in hospital must determine or establish and implement communication in performing handovers in a structured, effective, on time, accurate, complete, clear and understandable by the recipient to achieve the patient safety. Currently, not all staff nurses know what kind of data should be reported during handover. The main communication failure among nurses is the lack of communication among providers who support that the importance of the handover process (8).

Based on research conducted by Wijayanti et al (2023) about the correlation between the use of SBAR effective communication toward quality of handover implementation, it was found that there was a significant correlation which the  $p$ -value = 0.000 ( $p,0.05$ ) (9). The results showed that SBAR communication is very effective in being used to report the patient's condition and situation briefly during shift changes, before procedures performed or whenever it necessary in reporting the patient's condition. Through SBAR communication, the patient safety program will be proper implemented and improve the patient involvement during making decisions regarding the condition of their disease up to date.

Based on preliminary studies conducted by researchers at Undata Hospital, Central Sulawesi Province, it was found that SBAR communication had not been done optimally. While doing a shift handover, it is usually recorded in the report book. Staff nurses also said that the documentation was not effective because it take time to documented the nursing care.

## **METHOD**

This is qualitative research by using the research and development method, which is a method used to produce a particular product. In the ten steps of the research and development research scheme, researchers only perform up to the third stage, it is the development stage of the preliminary form of product, namely the development of the initial product of the final result of research and development activities in the form of a complete product design with its specifications. In this third stage, researchers found that there was without SBAR communication form used in conducting handovers, so researchers designed SBAR communication forms which it continued to design SBAR communication in an application. The other stages have not been performed by researchers because it need more time to perfect the components. This research will certainly be very good if it is continued until the tenth stage so that the SBAR communication application can be used in hospitals that could improve the nursing services.

## **Ethical Approval**

This study was approved by the Health Research Ethics Committee of X University (Approval Number: 123/KEPK/2024). All participants, including parents or guardians for participants under 18, provided informed

consent prior to participating in the study. The confidentiality of all participants was strictly maintained throughout the research process.

**RESULTS**

**Qualitative Research**

The qualitative stage of research analysis is to explore the SBAR form as the first part of designing a web-based management information system in order to increase the effectiveness of communication during the *handover* process, through data information on input, process and output activities in the *handover* process at Undata Hospital, Central Sulawesi Province through digital-based SBAR design, as follows:

**Identifying and collecting information related to the application of digital-based SBAR communication in conducting the handovers**

Researchers collected information from various sources of literature, then analyzed the information obtained and adjusted it to the needs of nursing services at Undata Hospital, Central Sulawesi Province. So far, SBAR communication has not been used at Undata Hospital, so that handovers that performed by staff nurses use patient medical records and reports book. The total of staff nurses in the Flamboyan ward are 21 nurses, in the Seroja ward are 21 nurses, the Dahlia ward are 16 nurses and in the Bougenville ward are 15 nurses. Each ward consists of one head nurse and two team leaders. From these findings, the researchers designed the SBAR communication in the form and researchers conducted a forum group discussion (FGD) to discuss related to the SBAR communication form that had been designed. The designed SBAR form is as follows:

HOSPITAL LOGO		SBAR DOCUMENTATION FORM IN HANDOVER	
<b>SITUATION</b>	Registration Number	:	
	Name	:	
	Age	:	
	Medical Diagnose	:	
	Nursing Medical	:	
	Length of Stay	:	
	Main Problems	:	
<b>BACKGROUND</b>	Admitted Reason	:	
	Current Reason	:	
	Past Disease History	:	
	Other Examinations	:	
	DPJP Therapy	:	
<b>ASESSMENT</b>	Consciousness	:	
	BP	:	
	Pulse	:	
	Respiration	:	
	Temperature	:	
	Pain Scale	:	
<b>RECOMMENDATION</b>	Nursing intervention	:	
	has done doctor's		
	Doctor's Order	:	
	Reporter Signature	Receiver Signature	

Based on the identification of the SBAR communication process in the handover process obtained and interviews with the FGD method involving 26 respondents, it can be concluded as follows: 1) There is no SBAR form available in the hospital, so far SBAR communication is only done for consult to doctors. 2) Handovers have been done so far by using patient medical records and report books. 3) Handovers are not maximized because sometimes some staff nurses are not on time and they think that nursing care documentation take a lot of time so that sometimes they are not optimal in providing the nursing care. 4) The staff nurse expected that in the future the hospital can provide SBAR communication applications that could help the nurses process in conducting nursing documentation so that they can perform the nursing care optimally. The expected application is easy application to access and to input.

**Revising the design of SBAR communication form in conducting handover**

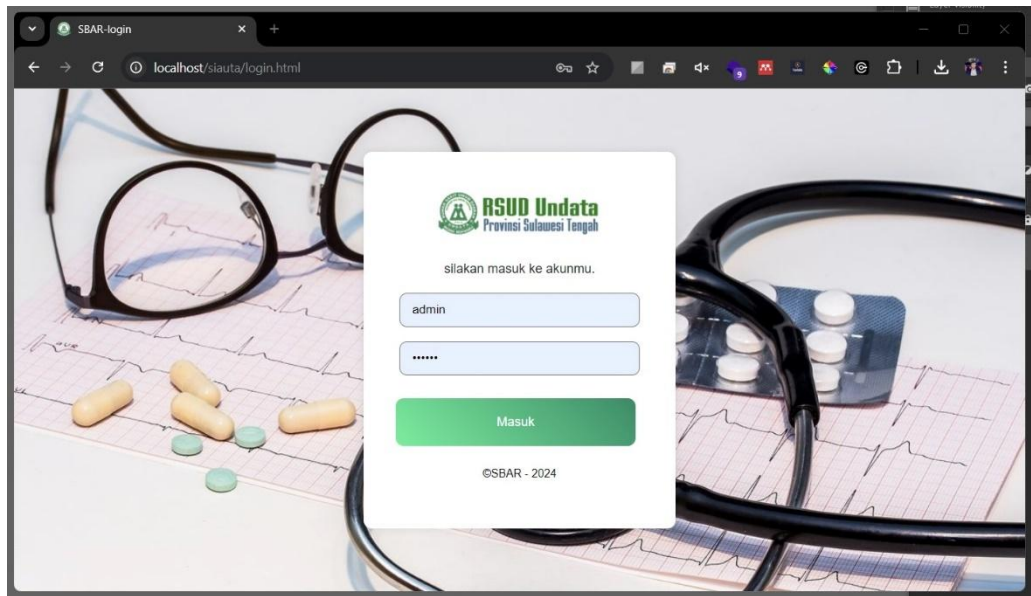
After designing the SBAR communication form, researchers conducted FGDs to discuss the draft of SBAR communication that had been designed. Discussions conducted by researchers with several respondents resulted in such of updates so that researchers made changes to make the design better. as for the changes made such as:

<b>HOSPITAL LOGO</b>	<b>SBAR DOCUMENTATION FORM IN HANDOVER</b>
<b>SITUATION</b>	
Registration Number Name Age / DOB Medical Diagnose Nursing Diagnose Date of Admission Main Problems DPJP	
<b>BACKGROUND</b>	
Current Problem Past Diseases History Allergic History Other Examinations DPJP Therapy	
<b>ASSESSMENT</b>	
Consciousness (EVM) BP Pulse Respiration SpO <sub>2</sub> Temperature Pain Scale (PQRST)	E :    V :    M :       P : Q : R : S : T :
<b>RECOMMENDATION</b>	
Nursing intervention has done	:
Doctor's Order	:
Reporter Signature	Receiver Signature

**Designing a digital-based SBAR communication application in conducting handover**

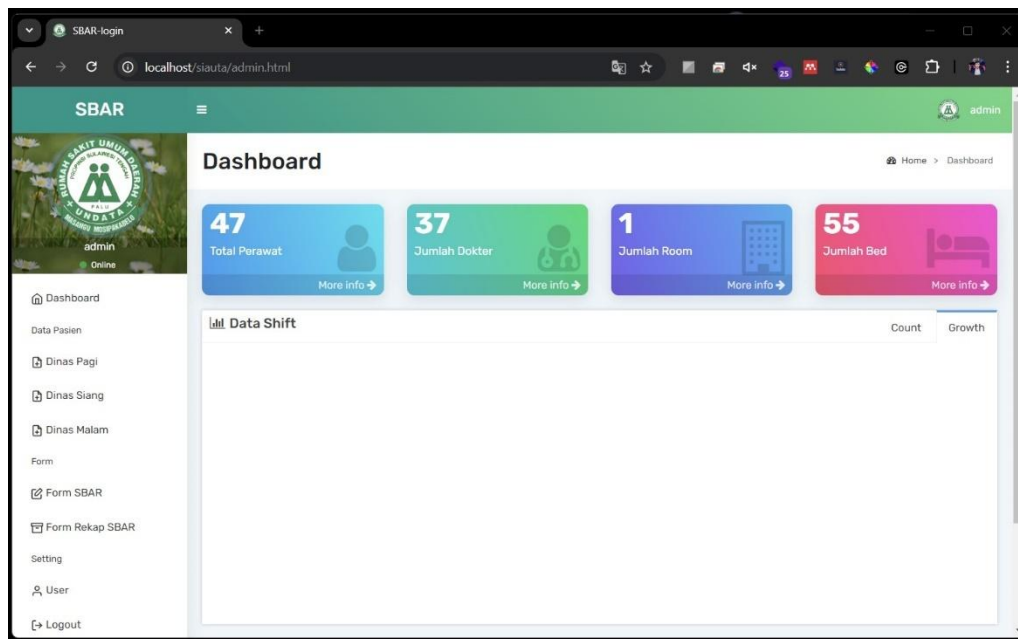
Based on the results of the FGDs that have been conducted and some literature, researchers designed the SBAR communication application as follows:

### Main Page



Enter username and password, then click login.

### Dashboard



Can find the room and registration of the patient every shift

### DISCUSSION

This study discusses the interpretation, discussion and implications for nursing services. In the interpretation and discussion of the results in discussing SBAR communication conducted at Undata General Hospital, Central Sulawesi Province. SBAR communication has only been done for consul with doctors, so that toward health services in the ward has not been used SBAR communication because Undata General Hospital does not have an SBAR communication format yet. In conducting handover, staff nurses use the patient's medical record or the reports book in each ward. From the results of discussions conducted by researchers with respondents, it was found that respondents sometimes did not perform handovers optimally because of staff nurses who are not on time so they

missed the handover, communication in conducting handovers was still lack of information because they only mentioned the patient names, bed numbers, and nursing diagnoses.

Nurses have a very important role in improving health status and ensuring that the services received by clients run well. The transfer of information from nurse to nurse or to other health workers in the health system is important things to maintain client safety in receiving medical therapy. In this case, good communication is closely related to support the various actions taken (10). Good communication that is clear, accurate, on time, complete and easy to understand that can reduce misunderstandings between nurses and other medical personnel or with the client's family. If the communication that is built does not have elements of clarity, accuracy and correct path, the nursing care provided is not optimal (11).

SBAR communication has four elements such as S (Situation) explains the view that occurs at this time, B (Background) explains something that is behind the conditions that occur, A (Assessment) explains the assessment of a problem and R (Recommendation) is an intervention need for suggestions for implementation that will be appropriate to do for the problem (10). SBAR is performed in handover for communication between nurses which provides a logical and organized sequence, easy to remember and useful for summarizing every conversation about the client's condition by providing a common understanding between nurses so that patient safety can be achieved (12).

The SBAR method has several advantages and contributes to more specific and effective communication. The use of the SBAR method improves handover quality and patient safety. It is easier for nurses to establish contact at the start of handover, and documentation becomes complete after using SBAR. The SBAR method also addresses the problem of nurses need a lot of time in documenting of nursing care (13).

Currently, we have in the industrial revolution 4.0 which all work is required to use digital technology, artificial intelligence, connectivity and system integration in various aspects of production and human life. For this reason, the nursing field needs to improve and keep in update things. In answering the needs of nursing services that are more effective and efficient, and ensure patient safety, it is necessary to design a digital-based SBAR communication application. In answering these challenges, researchers designed a digital-based SBAR communication application with the expected of improving the quality of nursing services and patient health status.

Based on the findings of researchers in one of the private hospitals in West Java Province, which the hospital has implemented digital-based SBAR communication in nursing services. It makes researchers want to design and develop the similar thing that could be applied at Undata Hospital, Central Sulawesi Province. By it the hospitals expected in Central Sulawesi are also have excellent facilities to support nursing services.

### **Limitations and Cautions**

The limitation in this research is that the application design is still website-based and has not been integrated with the SIMRS in the hospital. Researchers hope that in the future this application design can be developed and applied in hospitals.

### **Recommendations for Future Research**

It is expected that this research can be further developed into an application development and not just a design. The health filed in the future must follow the development of information technology so that every hospital needs to develop technology that can support nursing services. By this application design, it is expected that it can make it easier for nurses and other health teams to conduct the handovers so that they can work more effectively because so far nurses need a lot of time to do nursing documentation.

### **CONCLUSION**

The results of the research that has been done can be concluded that the design of SBAR communication applications by using the research and development (RND) method reaches until the third stage of the ten stages. Researchers identify needs, make research plans and design digital-based SBAR communication applications in conducting handover in the future will be needed by nurses so that they can maximize health services and assist nurses in documenting nursing care. By digital-based SBAR communication, it can be ensured that nursing care documentation is proper input and it does not need paper to store because it requires a large budget. It is expected

that this research could be continued to the tenth stage so it can produce the things that could be applied at Undata Hospital, Central Sulawesi Province.

### **AUTHOR'S CONTRIBUTION STATEMENT**

Viere Allanled Siauta designed the study, implemented the research and analyzed the results. Adillah Imansari designed the study and supervised the interpretation of the results. Olivia Ice Lilipaly, wrote the manuscript. All authors discussed the results and contributed to the review of the final manuscript.

### **CONFLICTS OF INTEREST**

The authors declare that they have conflict of interest related to this publication.

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### **BIBLIOGRAPHY**

1. Mardiana, S.S, Kristina, T.N, Sulisno, M. Penerapan Komunikasi SBAR Untuk Meningkatkan Kemampuan Perawat Dalam Berkomunikasi Dengan Dokter. *Jurnal Ilmu Keperawatan dan Kebidanan*. 2019. 10 (2)
2. Haro, M, Fahmi, A, Reffita, L.I, Ningsih, N.S, Sholiah, N, Alwi, N.P. *Komunikasi Kesehatan*. Bandung : Media Sains Indonesia. 2022
3. Daud, A. *Sistem Pelaporan dan Pembelajaran Keselamatan Pasien Nasioanal (SP2KPN)*. Jakarta: Komite Nasional Keselamatan Pasien Kemenkes RI. 2022
4. Zarkasi Z, Lustono L, Zhafira N.J, Laily N, Febrian W.D, Triono F, Yuliati E, Fajar, F, Amandin, Irawan I. *Manajemen Sumber Daya Manusia (The Art of Human Resource, Human Capital and Human Relation*. 2023
5. Febrian W.D, Sani I. *Systematic Literature Review : Implementaion of Talent Management for Crewing in Shipping Companies to Rganizational Sustainability*. *Indonesian Journal of Business Analytics*. 2023. 3 (5), 1837-1848
6. Viere Allanled Siauta. *Gambaran Pelaksanaan Komunikai Dalam Melakukan Handover Di Pelayanan Keperawatan Rumah Sakit*. *Prosiding Pertemuan Ilmiah Nasional Penelitian & Pengabdian Masyarakat II, PIN-LITAMAN II*. 2021. 2 (1). ISSN : 2654-5411
7. Fira Dilla Zaskia, Kamariyah, Indah Mawarti. *Gambaran Penerapan Sasaran Pasien Safety Oleh Perawat Di Ruang Rawat Inap RSUD Mayjen H.A Thalib Kota Sungai Penuh*. *Jurnal Ners*. 2023. 7 (2), 1776-1781
8. Ade Herawati, Tuti Nuraeni. *Penggunaan Model ISBAR3 Berbasis Elektronik Dalam Upaya Meningkatkan Keselamatan Pasien : Study Literature*. *Jurnal Surya*. 2019. 11 (3). Hal.9-15
9. Wijayanti, Triastuti Handayani, Luluk Purnomo. *Hubungan Penggunaan Komunikasi Efektif SBAR Terhadap Kualitas Pelaksanaan Handover*. *Journal Inovation in Education (INOVED)*. 2023. 1 (4), 106 - 117
10. Safitri, W., Suparmanto, G., & Istiningtyas, A. *Analisis Metode Komunikasi Sbar (Situation, Background, Assesment, Rekomendation) Di Instalasi Gawat Darurat*. *Jurnal Kesehatan Kusuma Husada*. 2022. 13(2), 167–174. <https://doi.org/10.34035/jk.v13i2.845>
11. Saragih, A. M. L., & Novieastar, E. *Optimalkan Penerapan Komunikasi SBAR saat Serah Terima Pasien antar Shift Keperawatan*. *Jurnal Keperawatan Silampari*. 2022. 6 (1), 36– 43. <https://doi.org/https://doi.org/10.31539/jks.v6i1.3755>
12. Komang Menik Sri Krisnawati, Ni Putu Emy Darma Yanti. *Gambaran Pengetahuan Mengenai Teknik Komunikasi SBAR Pada Perawat Dalam Handover*. *Jurnal Keperawatan*. 2023. 15 (1), 221-226.

- <https://journal.stikeskendal.ac.id/index.php/Keperawatan>
13. Haddeland, K., Marthinsen, G. N., Söderhamn, U., Flatland, S. M. T., & Moi, E. M. B. Experiences of using the ISBAR tool after an intervention: A focus group study among critical care nurses and anaesthesiologists. *Intensive and Critical Care Nursing*. 2022. 70 (January). <https://doi.org/10.1016/j.iccn.2021.103195>