Implementing the Verbal and Electronic Handover in General and Psychiatric Nursing Using the Introduction, Situation, Background, Assessment, and Recommendation Framework: A Systematic Review

Abstract

Background: Patient handover (handoff in America) is the transfer of information and accountability among nurses assigned to patient care. Introduction, Situation, Background, Assessment, and Recommendation (ISBAR) is currently the most popular framework for framing handovers. However, research shows that incomplete handovers and information transfers among healthcare providers and nurses exist and are responsible for adverse patient events. **Materials and Methods:** The current systematic review aims to view contemporary literature on handover, especially but not exclusively in psychiatric settings, and to extract current conditions from Electronic Patient Records (EPRs) using the ISBAR framework. A total of fifty-five scientific papers were selected to support the scoping review. Eligibility criteria included structured research to analyze outcomes, completed by reviewing policy papers and professional organization guidelines on I/SBAR handovers. **Results:** Our systematic review shows that the application of ISBAR increases interprofessional communication skills and confidence and the quality of the transfer of clinical information about patients, resulting in increased patient safety and quality of care. **Conclusions:** Implementing the knowledge and application of structured patient handover will respond to current recommendations for service improvement and quality of care. Furthermore, nurses who use ISBAR also reported its benefits as they feel they can deliver what is required for patient care information in a structured, fast, and efficient way. A further increase in the efficacy of handovers is reported by using EPR.

Keywords: *Medicine, nursing, patient handoff, patient handover, psychiatric nursing*

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Introduction

A nursing handover occurs when one nurse transfers patient care to another; for example, each patient is discussed on average at the end of a nursing shift.[1] There are several ways to carry out handovers in daily practice, including verbal handovers, reading from the patient's medical records, or a combination of both; some patients participate in handovers at their bedside to exchange information with their carers.[1] It is reported that one of the most crucial steps in a patient's journey is the clinical handover, a core skill that must be taught to junior clinicians and health professions students.[2] However, despite clear frameworks and guidelines for providing clinical handovers, these are frequently poorly performed, often with omitted necessary details and irrelevant points included.[2] Instead, implementing a systematic, standardized handover framework, such as Introduction, Situation, Background, Assessment, and Recommendation (ISBAR), may enhance patient care outcomes.[2] A handover is a procedure for shifting accountability from a sender to a recipient via communication, information transmission, interaction for ambiguity resolution, and context-sensitive patient care management.[3] Clinical handover, or "handoff" in North America, is when part or all of the professional responsibility and duty for caring for a patient or group of patients is temporarily or permanently given and communicated to another person or group of professionals.[4] Clinical handover is also a direct transfer of information about patients, supporting the circulation of clinical accountability and responsibility among healthcare professionals to enable continuity of care for the patient and facilitate

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shared awareness of patients' conditions and planned management.[5,6]

However, broken communication links between healthcare professionals and during verbal and written handovers about patients are responsible for 25% to 40% of adverse patient care events, 27% of cases of clinical misconduct, and over 70% of warning clinical incidents.[7] An investigation of 23,000 medical malpractice lawsuits found that more than 7,000 were caused by communication breakdowns among caregivers during patient handovers, resulting in about 2,000 preventable deaths and 80% of serious medical errors.[8] On the other hand, electronic health records in nursing have been suggested to reduce clinical mistakes, improve handoffs, and fill in information gaps by ensuring data flows smoothly and consistently between health providers.[9] A series of National Health Service (NHS) in the UK white papers encourage implementing electronic patient handover, indicating that the goal is to make patients' clinical data available to any involved staff member, wherever they are.[10]

We aimed to conduct a systematic review to provide a qualitative perspective on how and why structured patient handover/handoff are accomplished. We also aimed to offer a pathway to implementing a politic of inclusion in health care and a preferential instrument for communicating salient data about patients. Without proper patient handover/handoff, there is missing data in patient care, and challenges ensue in completing care plans. Our preliminary meta-analysis could not capture more naturalistic aspects of clinical handovers. Instead, the current systematic review follows our previous research, highlighting that interprofessional team performance bottlenecks are linked to communication impasses in handovers.[11] The present review thus aimed to collect existing literature on clinical handovers to extract the outcomes of I/SBAR training and its application in clinical practice healthcare settings.

Materials and Methods

The current systematic review lasted from August 2022 to February 2023, and the publication date of the extracted issues was expanded to include historical findings when a theoretical and applicative argument was presented. During this period, our team collected evidence for a systematic review to condense the results of target journals and extract relevant similarities and topics for discussion.[12] The study was part of a project sponsored by the local health authority and university. The current systematic review included peer-reviewed articles, dedicated websites on target topics, and books. The review also included government and policy websites, quantitative, qualitative and mixed-method research, professional guidelines, and white papers from nursing and medical organizations. A narrative analysis of a systematic review focuses on plausible truth and synthesizes topics studied by different research perspectives while interpreting findings that transcend specific disciplinary boundaries.[13] The aim is to make a compelling case based on expert knowledge that can win over a panel of peers; the author of a narrative analysis of a review is responsible for accurately portraying the supporting evidence (including original research) and how that information was used to arrive at the review's findings in the written output.[14]

All the articles selected were in English or translated into English. Exclusion criteria were studies where I/SBAR was a marginal finding, and the investigation did not primarily focus on it. We included policy articles on I/SBAR in mental and medical settings to extend the review's meaning. Exclusion criteria were other systematic reviews. Articles not in English were also excluded. The keywords used in PubMed/Medline search were "ISBAR, SBAR, patient handover*, nursing, electronic handover, psychiatry*, mental health, patient handoff, electronic patient record*, electronic medical record*, communication, information, setting*, mental health, nursing, and policy." The same applied to the other search engines. The keywords were aggregated with the Boolean connectives AND, OR, and NOT. Database searches for electronic sources were conducted at the local University Online Library, Web of Science, Medline/Pubmed, Embase, ERIC, Scopus, and ProQuest.

PRISMA flowchart summarized the literature search outcomes [Figure 1]. Extracted data contained the outcomes of the individual studies.[15] At least two researchers scrutinized the extracted literature and articles, one being the principal author (CL) while the other anauthored author supervised the review. All the extracted papers were reviewed manually. We used the Population, Intervention Outcome (PIO) framework as an extraction method.[16] For the quality assessment, we employed Cochrane ROB-2 software to evaluate biases.[17] CL and MR (unauthored) appraised all studies, and disagreements with the other unauthored researcher were discussed between the two. In the case of any dispute, the opinion of a more experienced person or a third person was considered. Study quality was not a factor in inclusion or exclusion criteria, as per the Arksey and O'Malley scoping review framework.[18] This framework includes some recommendations such as stage one: clarifying and connecting the purpose and research question; stage two: balancing feasibility with the breadth and comprehensiveness of the scoping process; stage three: using an iterative team approach to selecting studies; stage four: incorporating a qualitative thematic analysis; stage five: including stakeholder interaction as a necessary knowledge translation component of the scoping research approach; and stage six: considering the implications of study findings to policy, practice, or research.[19] A total of 50 documents were retained for the study after being screened for quality and relevance to the review topic. We extracted population, settings, interventions, and outcomes [Table 1]. The current review
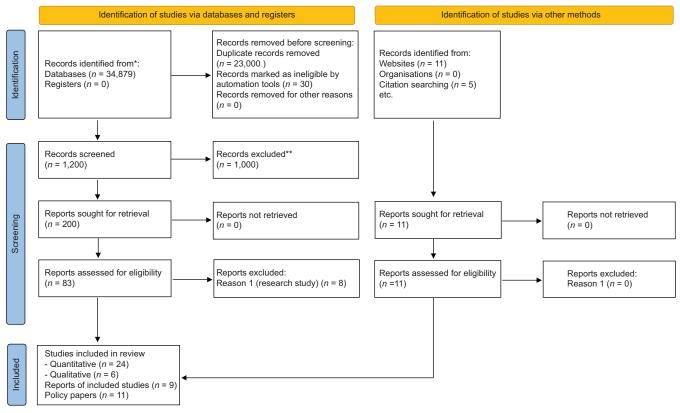
Figure 1: PRISMA flowchart. *Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). **If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools. *From:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al*. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org

did not require ethical approval from local health and academic authorities.

Ethical considerations

The current study is a systematic review. It did not imply direct contact with a sample of people. The author did not have direct participation of human subjects or involvement in an experimental design. Data were collected from an online literature search and not from hospital depositories. No ethical approval was essential for the current study. According to the Declaration of Helsinki, facts were published with the authors endorsing and supervising the findings' comprehensiveness and correctness.

Results

ISBAR handover is a communication proficiency that the US Navy made to help submarines talk to each other clearly and accurately; the World Health Organization has backed ISBAR handover to provide a standard way of speaking that can be used in many clinical settings, such as shift changes, patient allocations for tests or appointments, inter-hospital transfers, and escalation of a patient who is getting worse.[2] A structured clinical handover enhances patient safety and care by reducing communication mistakes within and across health carers while increasing the likelihood that crucial information

will be correctly conveyed and acted upon during the care transition.[45] Additionally, electronic handover ensures quick interprofessional sharing of patient information and is easily reachable by all the healthcare providers involved with the same patient.[46]

The Australian Commission on Safety and Quality in Health Care has created the following protocols for patient handover, often known as the transfer of care: (1) the event, such as patient admission, referral, or discharge during shift changes or patient movement within or between a hospital, unit, or services; (2) the handover approach, which can use face-to-face or telephone communication, written instructions, and electronic handover tools or systems; (3) a clinical handover location, such as at a patient's bedside in a shared staff area at a hospital or clinic reception, (4) who takes part in clinical handover, such as all health carers' working for the same organization, multidisciplinary teams of health carers from various organizations or agencies, a treating clinician, and a patient with their family or caretaker (e.g., ambulance officers and emergency workforce).[47]

From the extracted studies, the primary outcomes deriving from the application and learning of I/SBAR clustered around the following domains: (1) increased communication and handover skills and

Table 1: Summary of findings, outcomes, and quality assessment

Authors	Setting and population	Interventions	Outcomes[***]	Rob-2 Quality Assessment[****,*****]					
				D1	D2	D3	D4	D5	OA
Kostoff et al., 2016[20]	School of Pharmacy	Simulation-based on SBAR where pharmacy and nursing students were, respectively, sender and receiver	O1	⊕	⊕	⊕	⊖	⊕	⊕
Choi & Chang, 2023[21]	Nursing home emergency	Interviews on SBAR application and network analysis on data from semi-structured, face-to-face interviews	O4	⊖	⊕	⊕	⊖	⊖	⊕
Hum 2019[22]	Nursing school	Impact of SBAR on communication performance, perception, and practicum-related outcomes in senior-year nursing students.	O1	⊕	⊕	⊕	⊕	⊕	⊕
Lee & Kim, 2020[23]	Nursing school	Team task performance was categorized into two phases: the initial team performance before a call to a mock doctor and the team task performance after receiving verbal instructions from a doctor via phone.	O3	⊖	⊕	⊕	◐	⊕	⊕
Shrader et al., 2015[24]	PharmD fourth year	Simulation with standardized colleagues.	O3	⊖	⊕	⊕	⊕	◐	⊕
Barnett et al., 2017[25]	PharmD students	Simulated interactions with healthcare providers.	O2	⊖	⊕	⊕	⊖	◐	⊕
Acharya et al., 2016[26]	School of psychiatry	Three-hour sessions in simulation education.	O2	⊖	⊕	⊕	⊕	⊕	⊕
Brust-Sisti et al., 2019[27]	Pharmacy school	Simulated telephone intervention.	O1	⊖	⊕	⊕	⊕	⊕	⊕
Jeong and Kim, 2020[28]	Nursing college	Handover skills.	O1	⊖	⊕	⊕	⊕	⊕	⊕
Noh & Park, 2022[29]	Nursing college	Simulation with 200-minute sessions for 15 sessions.	O1, O2	⊖	⊕	⊕	⊕	◐	⊕
Cooper et al., 2019[30]	PharmD and DPT* students	Educational intervention on SBAR and interprofessional education using an online audio-conferencing tool.	O2	⊖	⊕	⊕	⊕	◐	⊕
Franko et al., 2021[31]	Nursing and medical school	Education in the use of SBAR.	O2	⊕	⊕	⊕	⊕	◐	⊕
Chen et al., 2020[32]	Public hospital	The ISBAR** communication training impacts residents' interpersonal communication and teamwork in general practice standardized training.	O3	⊖	⊕	⊕	⊕	◐	⊕
Yeh et al., 2019[33]	Nursing school	Communication performance.	O1, O2	⊖	⊕	⊕	⊕	⊕	⊕
Breen et al., 2019[34]	Nursing and medical school	Proficiency-based progression training approach to clinical communication in the context of clinically deteriorating patients.	O1	⊕	⊕	⊕	⊕	⊕	⊕
Marshall et al., 2009[35]	Medical school	Communication during telephone referral in a simulated clinical setting.	O1	⊕	⊕	⊕	⊕	⊕	⊕
Mutter et al., 2021[36]	Medicine and nursing school	Mock-paging interprofessional education.	O1	⊖	◐	⊕	⊕	◐	⊕
Janaway et al., 2021[37]	Mental-health settings	Survey about awareness of SBAR through its use and benefits.	O2	⊖	⊕	⊕	◐	◐	⊕
Abela-Dimech, 2018[38]	Mental health settings	Impact of SBAR on 122 handovers.	O2	⊖	⊕	⊕	⊕	◐	⊕
Lee & Jang, 2021[39]	Mental health settings	SBAR simulation to improve communication skills.	O1	⊖	⊕	⊕	⊖	◐	⊕
Ting et al., 2017[40]	Obstetric wards	One-hour session during monthly meetings.	O2, O5	⊖	⊕	⊕	⊕	⊕	⊕
Raurell-Torredà, et al., 2021[41]	Nursing school	The intervention group was trained in teamwork skills, role, and task assignment skills, and the use of the SBAR worksheet in a one-hour role-play training session.	O2	⊕	⊕	⊕	⊕	⊕	⊕
Spooner et al., 2018[42]	Public hospital	Checking if, after ISBAR training, there is an increase in completed core categories.	O1, O3	⊖	⊕	⊕	⊕	◐	⊕

Contd...

Table 1: contd...

				D1	D2	D3	D4	D5	OA
Kaltoft *et al*., 2022[43]	Post-anesthesia care unit	Nurses were interviewed about their satisfaction with the handover via an electronic survey.	O1	⊖	⊕	⊕	⊕	⊕	⊕
De Meester & Vespury, 2013[44]	Public hospital	SBAR Training of Intensive Care Unit (ICU) nurses.	O1, O5	⊖	⊕	⊕	⊕	⊙	⊕

*doctor of physical therapy;**Introduction, Situation, Background, Assessment, and Recommendation ,***O1: increased communication and handover skills and quality; O2: increased confidence, preparedness, and self-efficacy; O3: increased interprofessional communication skills and confidence; O4: registered nurses are more frequent senders in communication exchanges;O5: increased patient safety.****D1: Randomization process; D2: Deviations from the intended interventions; D3: Missing outcome data;D4: Measurement of the outcome; D5: Selection of the reported results; OA: Overall. *****Low risk: (+) ; Some Concerns: (!); High risk (-)

quality, (2) increased confidence, preparedness, and self-efficacy in those who applied the handover, (3) increased interprofessional communication skills and confidence, (4) registered nurses are more frequent senders in communication exchanges, and (5) increased patient safety. The quality analysis evidenced a limited number of randomized controlled trials, although the overall risk of bias was low for all studies. The settings where I/SBAR was promoted or trained included nursing schools, medical and pharmacy schools, general hospitals, or specific healthcare departments. Most stakeholders from I/SBAR training were nurses and other healthcare professionals in any area of specialization [Table 1].

The basic psychiatric assessment and handover in the UK is any information about a patient that is structured to include reasons for admission and how the referral occurred, the history of the current presentation, personal history, family history for psychiatric conditions, past psychiatric history, medical history, risk assessment, mental state (behavior, speech, mood, thought, perceptions, and cognition), diagnostic impression, treatment plan, capacity, and insight.[48] Hence, a similarity exists between ISBAR and routine psychiatric handover.

From an initial systematic review of the literature, it was found that, at the current moment, there is no study about the use of ISBAR on electronic handover in psychiatry. Two extracted studies only report the use of electronic handover, but no mention is made of ISBAR. Studies on ISBAR were conducted in medical, nursing, or pharmacy schools but not in psychiatric settings, apart from the research by Koli and Filippidou.[49] In summary, from the initial search, limited studies have been conducted on ISBAR as a template for electronic handover in psychiatry.

Other qualitative studies do not provide sufficient ground to make recommendations about the effect size of ISBAR in mental health settings.[50,51] A paper in a psychiatric setting using verbal ISBAR showed that nurses scored highly in all sections of handover; at the same time, trainees and medical personnel mainly focused on the "assessment and recommendation" sections.[49] A study regarding the application of SBAR (an ISBAR without an "Introduction") was undertaken among mental health professionals; the results indicate that mental health nurses expressed knowledge of the SBAR, ease of use, actual use, better efficacy in communication, and value in comprehending patients.[37] In the second study, conducted in Canada, psychiatric nurses were audited with questions about handover; they reported an increase in confidence, preparedness, and self-efficacy in those who adopted SBAR or ISBAR handover.[38] After scenario-based training in ISBAR with psychiatry nurse trainees, these last reported feeling more empowered when interacting with senior colleagues and a better understanding of the part of other professions in the handover process.[26]

A uniform, standard method of communicating patient information increases compliance with and clarity of handover procedures; at the same time, pre-set forms rather than open text templates are advantageous, according to research into electronic handover within medical and surgical specialties.[52] Furthermore, psychiatric handovers are often incomplete. It is hoped that electronic handovers in health care might fill information gaps while improving information sharing among all caregivers linked to a communal patient record.[52] Information that might also go on EPR is (1) data related to the current illness; (2) diagnosis or previous diagnoses; (3) warning signs or significant symptoms; (4) work or other information related to private life; and (5) any information related to therapy, such as duration, steps to increase compliance, and other aspects of care.[52] After patients with a mental or medical health condition are cleared from the hospital, they usually have EPRs readily available to the community team for the after-discharge follow-up.[53]

To lessen the likelihood of misunderstanding or miscommunication between the nursing profession and the patient, handover communication protocols are intended to assist nursing staff in organizing their handover communication and presenting patients' information logically and coherently.[54] Therefore, a structured communication framework for nurse handover is beneficial in ensuring that clinicians cover every crucial piece of information.[55] A handover also allows the giver and the recipient of the communication about the patient's data to obtain clarification.[7] Furthermore, a structured,

standardized clinical tool for handovers may help decrease technical mistakes and high-risk events by efficiently delivering correct and complete clinical information with fewer omissions.[56] Moreover, a handover communication system facilitates collaboration among hospital staff members at various hierarchy levels and multidisciplinary clinical teams.[57]

Our systematic review has confirmed the importance of endorsing routine ISBAR handover in all clinical practices. Handovers also improve interprofessional performance and reduce team communication bottlenecks if there is a lack of clear directives on sharing essential clinical information among team members. Furthermore, handover training and application reinforce nurses' self-esteem while reducing information gaps and the likelihood of adverse clinical effects in patient care. The global outcome is improved practice, improved quality of care and safety, and enhanced self-esteem in health carers who apply ISBAR and optimize data transfer within teams involved with the same patient's care. Evidence of these outcomes was extracted from current literature on the topic. However, despite the limited studies on long-term effects and randomized controlled trials of handoff training and application, preliminary data from different settings and studies confirm the applicability and usefulness of ISBAR handover on patient care.

Discussion

Several professional organizations in the UK are endorsing the need to implement SBAR/ISBAR handover. A patient SBAR handover is appropriate when it allows for planned out and moving patients between transferring and receiving teams, according to the National Institute for Health and Care Excellence, which guides and endorses good clinical practice in the UK.[58] The Royal College of Nursing in the UK endorses studies reporting that poor communication is one of the leading causes of patients' dissatisfaction with health care; at the same time, there is strong evidence connecting team communication to treatment results.[59,60] The Royal College of Physicians in the UK supports a study that suggests that providing safe patient care depends on effective communication; moreover, utilizing organized communication approaches, such as the SBAR handover, may increase patient safety.[51] The NHS Institute for Innovation and Improvement in the UK encourages healthcare practitioners to understand the impact of SBAR handover on their communication interactions.[61]

Traditional face-to-face interaction is increasingly being replaced (in the healthcare system) by a group of people collaborating across organizational, temporal, and spatial barriers using network connections and information technology.[62] Through these last, the teams coordinate meetings and complete tasks; furthermore, dispersed team members may meet specified objectives without being constrained by distance or deadlines.[63] A way forward is to incorporate the ISBAR template into EPR. The most popular platform used by the NHS for EPR is RIO. This last is a comprehensive electronic system accessible to authorized healthcare providers, where each nurse and carer can provide their input regarding a patient according to their expertise; it is usually accessible in hospitals through validated intranet authorizations. In mental health practice, RIO handovers are the only documents practitioners can access for notes about patient presentation and progress. Around 20,000 mental healthcare professionals through six London mental health trusts routinely use RIO.[63]

The RIO system has also brought about more extensive patient involvement with their care; all clinicians occupied in the care of a patient accrue into the same case record, which enables a care plan to be created, amended, and accessed more rapidly; clinicians assess the care plan with the patient and their carer on a flat panel screen—or even, in some multidisciplinary meetings, by projecting it onto a wall through a media projector—giving a new sense to patient involvement; this has been reflected in enhancements mentioned in a recent mental health service users' surveys, led by the Healthcare Commission.[63,64] Before being granted access to RIO, all personnel in the NHS UK are officially trained. An electronic card allows access to RIO for authorized personnel only. EPRs have legal significance, and any event that occurs to patients is recorded on RIO. EPRs are accessible to all personnel linked to a patient. This electronic platform for handovers is a promising method of promoting quality in handover and reducing information loss, impacting the quality of care and patient safety. However, nurses might express fear and anxiety during handovers, sometimes likely to be due to their lack of handover training or hesitancy in being involved in it; however, because a handover is not an easy procedure and should be accurate, complete, specific, relevant, timely, up-to-date, subjective, and objective, such learning is required both during undergraduate educational programs and as part of in-service educational programs in clinical settings.[65]

Yet, a two-fold increase in patients' mortality and duration of hospital stay is linked to poor communication between nurses and doctors.[66] Furthermore, ineffective interprofessional communication can lead to patients' disappointment, errors in diagnosis or medication, deferred treatments, or even severe patient injuries.[67,68] A systematic review of 11 studies found that mistakes in interprofessional communication can occur at any stage of communicating the ISBAR framework within a team, relating to the patient and consisting of (1) Introduction, where the presenter introduces herself, her role and where and why she is providing the handover inclusive of patient's biographical data such as gender, age, social, and living conditions, (2) Situation, where the communicator provides clarification on what is currently happening to a patient, (3) Background, is whatever has conducted to the current patient's situation, inclusive of previous hospital admissions, illnesses, and

contact with the healthcare services, (4) Assessment of the current clinical condition and (5) Recommendation for dealing with the current condition according to the carer's area of expertise.[69] In research on 16,165 electronic records in Michigan, among the significant drawbacks in interprofessional communication were missing necessary communications, missing communication goals, skewed physical or temporal situations or contexts of the message, missing key participants, and unclear or missing information.[70] On the other hand, note-taking throughout the handover procedure considerably reduces the quantity of lost information; if a printed handover sheet is used, 100% of the report is maintained, with just 1% of the information lost after five handovers; furthermore, the printed handover page is only helpful if the data on the written sheet is consistently updated.[71]

The NHS UK policy is to implement EPRs and handovers to make patient information available to all staff, wherever they are.[72] It is reported that illegible handwritten notes may happen as follows: (1) In clinics and hospitals, records may not be available because they have not been returned or are being used in another location; (2) paper records can only be in multiple locations simultaneously if they have been wholly photocopied; (3) paper records frequently lack important details or may not be available when a patient is seen; (4) records may be missing information due to a clerical mistake or a backlog in the filing room.[73] On the other hand, electronic health records have been suggested to reduce clinical errors, improve handoffs, and eliminate information gaps by ensuring that information flows smoothly and consistently between health providers.[64] More specifically, electronic handover is the transfer of information between healthcare providers involved with the same patient using different electronic platforms (e.g., computers, emails) where practitioners can share admission and discharge data and transfer information between shifts, teams, wards, health professionals, and services.[64,73] Nonetheless, there may be a 100% loss of information after five handover reports if nurses rely solely on verbal modes of communication; in contrast, there is a greater chance of retention of information if nurses combine oral methods of contact with a typed handover sheet.[74] Hence, structured clinical handovers have been found to enhance patient safety and care by reducing communication mistakes within and across health service organizations and increasing the likelihood that crucial information will be correctly conveyed and acted upon.[45] In line with these findings, the current systematic review will extract salient points about the value of handover and its theoretical framework with applications in nursing practice.

Conclusion

The current review highlights the significance of relying upon a framework to structure handover in daily clinical practice. The most popular handover nurses and health carers refer to is ISBAR. Most studies report that missing information and incomplete handover might cause clinical errors. On the other hand, structured handovers increase patients' safety and care. Using structured handovers boosts the feeling of self-efficacy in health carers while improving the clarity of their team communication. However, studies also indicate that handovers might be incomplete, and, in this case, there is misunderstanding and miscommunication between professionals, increasing the likelihood of medical errors. One way that is becoming prevalent is employing electronic handovers, which should solve many of the problems found in verbal and written handovers. The nursing policy should thus endorse the implementation of I/SBAR handover in all clinical and surgical specialties. Therefore, implementation research aims to comprehend and operate under real-world situations instead of attempting to account for or eliminate foreseeable circumstances as causative factors.[75] The scientific study of strategies to encourage the systematic integration of clinical research findings and other evidence-based practices into daily practice, thereby enhancing the quality (effectiveness, reliability, safety, appropriateness, equity, and efficiency) of health care, is known as implementation research; it includes studies on factors influencing organizational behavior and the behavior of healthcare professionals.[76] Efforts to improve handovers will be directed at this target. Yet, cautious conclusions should be made regarding the outcomes of the current review. The present study bears some limitations linked to the subjective methods of systematic reviews, which are informed by the author's instruments of selection and analysis of the extracted studies. Furthermore, the conclusions of a systematic review depend on the author's interpretations. Therefore, it was based on an interpretivism framework, which allows findings to be applied in different and similar settings and is subjective in generating theories yet under the bias of the researcher conducting the study and drawing the conclusions.[77] Limitations of the current review are also linked to the reduced external generalisability of the study with threats; for instance, one limitation is the population of interest in a review.[78] Other limitations are linked to the variety of settings and conditions that characterized the studies analyzed, accounting for the types of extracted outcomes. Although this review identified the nursing field as the population of interest, different settings, countries, and public or private practice might make a difference in the conclusions. Other limitations of the review reflect Rob-2 biases in the literature review about non-randomized studies, such as bias in the selection of participants (e.g., nurses from separate healthcare sectors), bias in the measurement of intervention (e.g., some studies used qualitative analyses, others quantitative ones), bias in the measurement outcome (e.g., the current review reports general effects on patient safety which are not measurable),

and bias in the description of the results (e.g., results linked to the risk of the poor handover were selected).[79]

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Conflicts of interest

Nothing to declare.

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