

Review

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Posted Date: 15 February 2026

doi: 10.20944/preprints202602.1056.v1

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Review

Standardisation Strategies for Nursing Handovers in Paediatric Hospitalisation: A Scoping Review

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Abstract

Background/Objectives: To identify existing evidence on strategies for standardising nursing handovers in paediatric hospital settings, given their impact on communication, safety, and quality of care. International bodies such as the WHO and The Joint Commission recommend standardisation as a key measure to reduce patient safety incidents. **Methods:** An integrative review was conducted in December 2022 using Medline, Cochrane Library, Scopus, and CINAHL databases. The search strategy included documents published between 2012 and 2022, in Spanish, English, Catalan, French, and/or Portuguese. We screened according to inclusion criteria (professional nurses and hospitalisation) and exclusion criteria (intensive care and medical professionals) and tabulated the results according to concurrent themes. Methodological quality was independently assessed using CASPe Network tools, the MMAT, and STROBE checklist. The PRISMA-ScR guidelines were followed. **Results:** A total of 308 results were obtained, 139 were reviewed and 25 were accepted, assessing acceptable methodological quality in 19 (one randomised clinical trial, four systematic reviews, one integrative review, five non-randomised clinical trials, three observational studies, two qualitative studies, and three mixed-methods studies). Structuring and standardisation strategies are found in hospitalisation, including SBAR, I-PASS, and Flex 11. There are tools to assess the quality of patient handover, such as the Handover CEX Scale. **Conclusions:** There are tools for structuring patient handoffs that have obtained positive results in improving quality of care, although the results in the paediatric hospitalisation nursing setting are limited.

Keywords: patient safety; patient handoff; communication; nurses; paediatrics; reference standards

1. Introduction

Patient safety is the reduction of adverse events associated with healthcare to the minimum acceptable risk (World Health Organization & WHO Patient Safety, 2009). Adverse events are defined as any event that has caused harm (accident) or may have caused harm (incident) linked to the conditions of care, which may result in increased hospitalisation time, sequelae at discharge, death, or any combination of these (Friese et al., 2008; Universidad Miguel Hernández & Ministerio de Sanidad y Consumo, 2006). Minimising the likelihood of adverse events occurring in healthcare facilities is possible by adopting a safety culture (Rocco & Garrido, 2017).

There is global interest in understanding the prevalence of adverse events, as well as implementing preventive measures to avoid them. These strategies culminate in the World Health Organisation (WHO) Global Patient Safety Action Plan 2021-2030. This plan, among many other aspects, states the importance of guaranteeing the safety of each clinical process, including the

transition of care and transfer of information (Strategic Objective 3) (Ministerio de Sanidad y Política Social, 2009; World Health Organization, 2021).

The forms of this transfer of information include patient handoff or patient handover. Cohen and Hilligoss define patient handover as the process of exchanging clinical information about patients between two or more professionals during a shift change, at the time of discharge or transfer of the patient. Handover involves transferring responsibility for a patient, including clinical aspects and legal liability, to another person (Ferrara et al., 2017), as noted by Elliot et al., who defined patient handoff as the process by which patient care is transferred from one professional to another (Arsoniadis et al., 2022)

The handoff includes several phases. Firstly, the preparation of organisational aspects related to the identification of necessary and relevant information. Second, the handover-reception of each patient and, finally, the closing, which includes observations of the outgoing shift (Sabet Sarvestani et al., 2014; Yáñez-Corral & Zárate-Grajales, 2016).

The transfer of information at patient handovers is recognised as a high-risk event, being a frequent breach of safety, as it is estimated that more than 4,000 information handovers occur in a typical university hospital every day (Fucik, 2019; O'toole et al., 2019)

After analysis of 2,455 sentinel events reported to it, the Joint Commission revealed that the main cause in more than 70% of cases was a communication failure (O'toole et al., 2019). Furthermore, it was the main cause reported by this organisation between 1995 and 2006, as well as the main reason for claims to insurance agencies for malpractice in the United States (The Joint Commission, 2007).

Along the same lines, an Australian study found through an analysis of clinical review and local incident reports that up to 70% of adverse events were due to miscommunication in information or patient handoffs (Porteous et al., 2009).

Quality in healthcare refers to 'the extent to which the services offered to individuals and communities enhance the probability of attaining desired health results while aligning with the latest professional insights' (Yáñez-Corral & Zárate-Grajales, 2016). The quality of patient handover is primarily related to communication, which depends on the following factors:

- Factors linked to the message. These are defined by the sender's jargon, the lack of precision of the information (Bressan et al., 2020; Ferrara et al., 2017), the use of abbreviations and acronyms, the incorporation of irrelevant data, and the omission of other data (Brown & Sims, 2014; Yáñez-Corral & Zárate-Grajales, 2016).
- Factors linked to the professional. These refer to the sender's communicative style, poor personal planning, the performance of different tasks simultaneously, poor ethical involvement, moral judgments, the non-active role of the participants, and the fear of making mistakes (Buus et al., 2017; Sabet Sarvestani et al., 2014; Yáñez-Corral & Zárate-Grajales, 2016). The lack of communication skills (Brown & Sims, 2014; Ferrara et al., 2017; O'toole et al., 2019), attitude and behaviour of the participants (Fucik, 2019), and one-sidedness of the communicative process (Ahn et al., 2021) have also been identified.
- Environmental factors. These include both the workload—and the consequent lack of time for the preparation of the handover (Ahn et al., 2021; Sabet Sarvestani et al., 2014; Yáñez-Corral & Zárate-Grajales, 2016)— and the development of an inadequate space—resulting in handovers taking place in crowded spaces, which can impede communication (Ahn et al., 2021; Ferrara et al., 2017; Raeisi et al., 2019; Sabet Sarvestani et al., 2014). Other barriers include the instability of the patient, the length of stay, the absence of nearby events, the exclusive focus on the tasks (Buus et al., 2017), and the familiarity and lack of complexity of the patients (Hughes, Serwint, O'toole, et al., 2019), all of which result in short handovers with little information being provided.

In response to this relevant public health problem, in 2005, the WHO and the Joint Commission published Nine patient safety solutions, with 'communication during patient handover' being the third solution, in which it was recommended to implement a standardised system for communication between staff at the time of handover, shift changes, and in the event of transfer to other units (Yáñez-

Corral & Zárate-Grajales, 2016). Standardisation is understood as the act of performing a practice according to a given model, norm, pattern, or reference (RAE - ASALE, n.d.).

Handover standardisation has been performed by different authors using templates to present information (Sabet Sarvestani et al., 2014), with checklists (Ahn et al., 2021), technological tools, standardised reports, or instruments with a minimum set of data to be provided (Bressan et al., 2020), together with the training of students (Solet et al., 2005) and nursing professionals for its implementation (O'toole et al., 2019; Yáñez-Corral & Zárate-Grajales, 2016).

In addition to transfer standardisation, it is necessary to structure the message, which has been considered a priority by several authors, as it favours the complete, effective, and collaborative transfer of information, limiting the likelihood of errors (Bressan et al., 2020; Brown & Sims, 2014; Müller et al., 2018; Sabet Sarvestani et al., 2014).

Moreover, it is emphasised that the structure and content of the patient handover should be specific to the unit in question or, in the case of being general, adaptable to different settings (Brown & Sims, 2014) while ensuring that the handover can be adapted to the clinical condition of the patient, the service in question, or the professional's level of experience (Bressan et al., 2020).

Finally, other methods have been identified and worked on to overcome the existing barriers in patient handoff, such as the development of communication skills (Ferrara et al., 2017), involving families and patients in the process—especially in paediatric settings (Groves et al., 2016)—, the availability of a specific place to perform it where distractions and interruptions are minimised (Brown & Sims, 2014), adapting the handover to the needs of each patient (Buus et al., 2017); and conducting the handover at the bedside.

Given the relevance of the problem, our objective was to find existing evidence regarding strategies for standardising patient handovers for nursing professionals in paediatric hospitalisation (Fucik, 2019; O'toole et al., 2019).

The research question is as follows: Does the implementation of a standardised patient handover tool for nurses in paediatric hospitalisation improve the transfer of information? Given the complexity and crosscutting nature of the topic, a broad scope of the review question was chosen.

2. Materials and Methods

A scoping review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Scoping Review extension (PRISMA-ScR) guidelines and checklist to achieve the highest possible methodological rigour, within the limitations of the question posed (Tricco et al., 2018). The search protocol was registered in OSF Registries (Buck Sainz-Rozas, 2023).

2.1. Sources of Information and Search Strategy

The search was conducted using the Cochrane Library tertiary information database and secondary sources: Medline, Scopus, and CINAHL. The scientific literature review was conducted in December 2022. The search strategy for each database was outlined around two conceptual sets: 'paediatric' and 'patient handoff'. Each set was expanded as much as possible by incorporating a thesaurus (MeSH terms, Table 1). For the standardised terms, the concepts 'shift-to-shift handover' and 'shift report*' were added as natural terms, and in those databases that did not allow the use of thesauri, the search was performed with natural terms.

To refine the search, limits were applied by using different filters in the databases. Two filters, i.e. year of publication and language, were applied. To these results, we added those found using a snowball technique which, despite not being found in the search performed, are of relevance for the present review.

Table 1. PubMed search strategy.

Search strategy

("pediatrics"[MeSH] OR "pediatric nursing"[MeSH] OR "hospitals, pediatric"[MeSH]) AND ("patient handoff"[MeSH] OR "shift-to-shift handover"[Title/Abstract] OR "shift report*"[Title/Abstract])

2.2. Inclusion and Exclusion Criteria

The inclusion and exclusion criteria used in this review are listed in Table 2.

Table 2. Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
Publications in Spanish, English, Catalan, Portuguese, or French.	Studies developed in economically developing countries.
Publications between 2012 and 2022.	Non-evidence-based recommendations from societies.
Studies analysing paediatric patient handoffs.	Grey literature (brochures, editorials, posters, and reports).
Studies analysing communication regarding the clinical safety of paediatric patients.	Clinical practice guidelines, protocols, and non-evidence-based tools.
Studies analysing communication among paediatric nurses.	Focus on special services (critical care, emergency, operating theatre, and neonates).
Studies that provide or include tools for information transfer among paediatric nurses.	Publications have focused on continuity of care between the services of the same hospital.
Studies that provide or include tools for the assessment of information transfer among paediatric nurses.	Publications have focused on the referral of patients from different hospitals.
Randomised or non-randomised clinical trials on the study subject.	Studies not considering the figure of the nurse.
Qualitative, quantitative, and/or mixed-methods research.	
Systematic reviews or meta-analyses on the study subject.	

2.3. Study Selection Process

The articles resulting from the search were allocated to reviewers based on their respective databases of origin. Each reviewer independently decided, based on the reading of titles and abstracts, the eligibility of each study based on the criteria described above and using three possible answers: yes, no, or unsure. A table was prepared for each database, including the title of the study, the eligibility assessment (yes/no/unsure), and the observations (justifying the decision). Next, a consensus was reached among the authors to decide whether those considered doubtful met the inclusion criteria of the review.

Finally, the full texts of the studies considered suitable for the review were obtained. Due to the final number of articles selected, it was decided to distribute them among the reviewers based on the

differentiated conceptual sets. The review was conducted independently using a Mendeley reference manager as an automation tool to enable subsequent distribution of articles.

2.4. Tools for Assessing Quality and Risk of Bias

This process was carried out independently by each reviewer (PB, MD, LG) according to the previously described distribution of articles, and the articles were pooled to resolve any unclear aspects. Methodological quality was assessed using the tools of the Critical Appraisal Skills Programme Español (CASPe) (Cabello & CASPe, 2005a, 2005b; Cano et al., 2010) for qualitative studies, randomised clinical trials, and systematic reviews. Likewise, the 2018 version of the Mixed Methods Appraisal Tool (MMAT) was used to assess quasi-experimental and mixed studies (Hong et al., 2018). For observational studies, the Strengthening The Reporting of OBservational studies in Epidemiology (STROBE) checklist (Von Elm et al., 2008) was used. The guidelines of each scale were followed to assess quality, scoring one if the item was in the article and 0 if it was absent. In all cases, a score equal to or greater than 7 out of 10 was considered valid (Von Elm et al., 2008).

Articles that did not pass the methodological quality assessment were excluded. For the articles included, the level of evidence was determined according to Sackett's method, and the grade of recommendation was determined according to the modified GRADE system (Delgado et al., 2014). Finally, the full text of each article was read by the reviewers.

2.5. Data Extraction and Synthesis

This was performed by each reviewer independently through full-text reading. An Excel table was created to record the data into previously agreed subtopics to facilitate subsequent analysis and was completed by each author and subsequently reviewed by the rest. The information was grouped into the following topics: definition of 'handover communication', epidemiology on patient handover, patient safety-handover communication, professionals, barriers related to professionals, tools for assessing patient handover, tools for structuring patient handoff, and best practices. The data extracted from the articles and classed in the table above were pooled and synthesised according to the structured thematic groups.

3. Results

3.1. Selection of Studies

The database research found 308 results. As shown in the flow diagram in Figure 1, 93 of these articles were obtained from PubMed, two from the Cochrane Library, 117 from Scopus, and 96 from CINAHL. Of the 308 search results, 40 were excluded by applying the filters of year of publication (n= 34) and language (n=6), and 129 duplicates were removed. After reading the titles and abstracts, 119 were removed for not meeting the eligibility criteria. Only one full-text article could not be retrieved. The remaining articles (n=19) were eligible, and their full texts were thoroughly read. Six articles obtained from the citation reading were added to the results (View Figure 1).

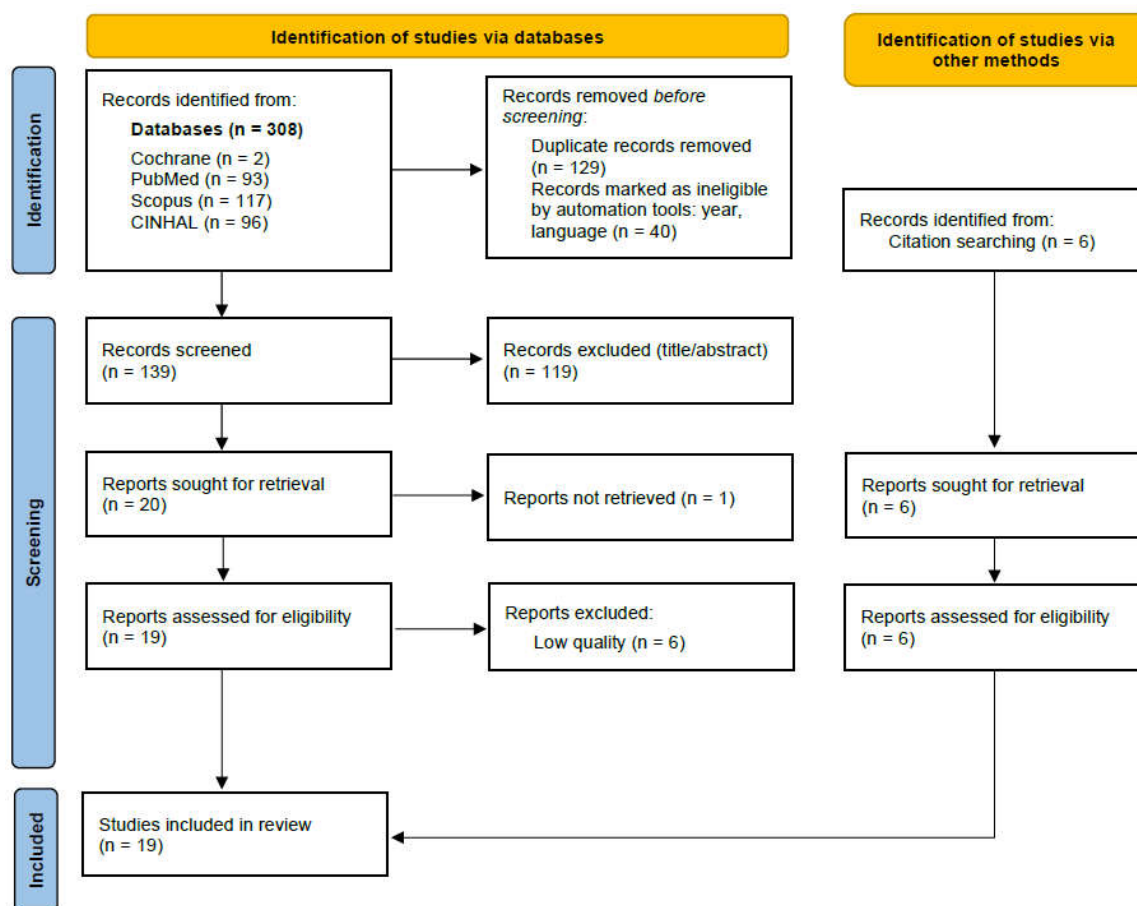


Figure 1. 2020 PRISMA flow diagram of the search process.

3.2. Risk of Bias and Characteristics of the Studies

Twenty-four percent of the accepted studies (n=6) did not obtain the acceptable score established by consensus in this study. The remaining 76% (n=19) were included. Table 3 specifies, for each accepted study, the title, author, year of publication, type of study, grade of evidence based on Sackett's method, grade of recommendation according to the GRADE system, and the score obtained in the 1-10 methodological quality appraisal.

Table 3. Publications included in the review and their characteristics.

Source	Type of study	GR	LE	RB
Directly Comparing Handoff Protocols for Pediatric Hospitalists (Lazzara EH et al., 2016) (Lazzara et al., 2016b)	RCT	1B	A	7.27
Changes in medical errors after implementation of a handoff program (Starmar AJ et al., 2014) (Starmar et al., 2014)	Quasi-experimental NRCT	2B	B	10
Handing Off Safety [...] (Groves PS et al., 2016) (Groves et al., 2016)	Qualitative	3A	1C	10
I-PASS Mentored Implementation Handoff Curriculum: [...] (O'toole JK et al., 2019) (O'toole et al., 2019)	Quasi-experimental NRCT	2B	B	8.57

I-PASS Adherence and Implications for Future Handoff Training (<i>Hughes HK et al., 2019</i>) (<i>Hughes, Serwint, O'toole, et al., 2019</i>)	Quasi-experimental NRCT	2B	B	10
Improving clinical handover in a paediatric ward: implications for nursing [...] (<i>Mannix T et al., 2017</i>) (<i>Mannix et al., 2017</i>)	Quasi-experimental NRCT	2B	B	8.57
Nursing clinical handover [...] (<i>Brown J et al., 2014</i>) (<i>Brown & Sims, 2014</i>)	Mixed	D5	1C	9.41
Multidisciplinary handoffs improve perceptions of communication (<i>Solan LG et al., 2014</i>) (<i>Solan et al., 2014</i>)	Quasi-experimental NRCT	2B	B	10
Creating a safe, reliable hospital at night handover: a case study [...] (<i>McQuillan A et al., 2014</i>) (<i>McQuillan et al., 2014</i>)	Observational	3A	1C	9.09
A tool for assessing the quality of nursing handovers: a validation study (<i>Ferrara P et al., 2017</i>) (<i>Ferrara et al., 2017</i>)	Cross-sectional observational	C4	1C	8.63
Challenges of Nursing [...] (<i>Sabet R et al., 2014</i>) (<i>Sabet Sarvestani et al., 2014</i>)	Qualitative	D5	1C	8
Standardized Bedside Handoff: [...] (<i>Fucik S., 2019</i>) (<i>Fucik, 2019</i>)	Mixed	3A	1C	7.64
Implementation [...] of an Institution-Wide EHR-Integrated Handoff Note (<i>Arsoniadis EG et al., 2022</i>) (<i>Stimpson et al., 2020</i>)	Mixed	3A	1C	9.41
Nursing handovers and patient safety: Findings from an umbrella review (<i>Bressan V et al., 2020</i>) (<i>Bressan et al., 2020</i>)	Umbrella review	D5	1C	8
Impact of the communication and patient hand-off tool SBAR on patient safety: [...] (<i>Müller M et al., 2018</i>) (<i>Müller et al., 2018</i>)	Systematic review	B3A	1C	9
Challenges of patient handover process in healthcare services: A systematic review. (<i>Raeisi A et al., 2019</i>) (<i>Raeisi et al., 2019</i>)	Systematic review	D5	1C	8
Diseño de un instrumento para evaluar el proceso de enlace [...] (<i>Yáñez-Corral AM et al., 2016</i>) (<i>Yáñez-Corral & Zárate-Grajales, 2016</i>)	Cross-sectional observational	C4	1C	9.09
Nurses' shift reports: a systematic literature search and critical review [...] (<i>Buus N et al., 2017</i>) (<i>Buus et al., 2017</i>)	Systematic review	D5	1C	8

Critical care nurses' communication challenges Systematic review D5 1C 9
during handovers: A systematic [...] (Ahn JW et
al., 2021) (Ahn et al., 2021)

Key: GR (grade of recommendation), LE (level of evidence), RB (risk of bias in base 10), RCT (randomised clinical trial), and NRCT (non-randomised clinical trial).

4. Discussion

4.1. Structuring Patient Handoff

There are various evidence-supported initiatives and methods for structuring patient handoff. On the one hand, Lazzara et al. sought to determine if there were differences in attitudes, behaviours, and duration of the handoff using the Flex 11 protocol versus the SBAR. The results suggested that Flex 11, a tool consisting of 11 categories divided into cards, was effective and beneficial in a simulated protocol setting (Lazzara et al., 2016a). Using Flex 11, practitioners had more positive attitudes, provided more information with the tool, and spent the same amount of time performing the handoffs independently (Mannix et al., 2017).

On the other hand, the SBAR is one of the most widely used methods. It consists of 4 items: Situation, Background, Assessment, and Recommendation. The ISBAR, SBAR-R, ISBARR, and ISOBAR tools all derive from the SBAR. The use of this strategy facilitates both inter- and intra-professional communication (Müller et al., 2018), ensuring that vital information is not lost, and that delivery can be done in an organised, timely, efficient, logical manner and at bedside (Mannix et al., 2017).

Units that used the SBAR method and performed patient handoff at a specific location obtained better results in terms of organisation. Müller et al. argued that preparation was required before use, as both the issuer and receiver had to share the same mental model. Furthermore, it was a communication technique that increases patient safety and is currently the best practice for transmitting information in critical situations and preventing adverse events (Ferrara et al., 2017; Mannix et al., 2017; Müller et al., 2018).

The authors of this review studied the influence of the SBAR method on patient safety by calculating the incidence of adverse events. They concluded that SBAR implementation has a positive influence on patient outcomes (Müller et al., 2018). Professional satisfaction improved with the implementation of this tool and was related to a better perception of interdisciplinary communication and teamwork. The authors concluded that the SBAR tool can be adapted to multiple health services, especially those in which clear and effective communication between professionals is required (Ferrara et al., 2017; Mannix et al., 2017; Müller et al., 2018).

In parallel, another tool that can be useful for information transfer is I-PASS (Starmer et al., 2014). This mnemonic rule is used to standardise oral and written information transfers. This includes severity of illness, a patient summary, an action list, situational awareness, and contingency plans. Its implementation was associated with a relative reduction in the rate of medical errors and preventable adverse events, which do not increase the time required to complete handoffs (Hughes, Serwint, O'toole, et al., 2019; Starmer et al., 2014).

Along the same lines, O'Toole et al. concurred on the acquisition of fundamental patient care skills by participants and competently distinguished between high- and low-quality handoffs using the I-PASS handoff assessment tools. This technique has a positive impact on the safety, efficiency, and effectiveness of handoffs between healthcare providers (O'toole et al., 2019).

Other tools include NBSR and SAFETIPS mnemonic charts, which help in transferring patients' clinical records between shifts, maintaining patient safety, reducing risk of harm, and improving the perception of handoffs and communication (Groves et al., 2016; Solan et al., 2014). The main structuring tools used in the search are shown in Table 4.

Table 4. Patient handover standardisation tools.

Tools	Description	Observations
Flex 11 (Lazzara et al., 2016a)	A structured tool, specific to paediatrics, with 11 categories (Demographics, Patient Summary, Current Issues, Laboratory and Other Tests, Medications, Pulm/CV/Neuro, Access, Social, As Needed, etc.).	Designed by paediatricians and intended for medical handovers. Its effectiveness was compared against SBAR.
SBAR (Müller et al., 2018)	The main method, popularised and supported by Kaiser Permanente and the Joint Commission. It is an acronym for Situation, Background, Assessment, and Recommendation.	It has been recommended and endorsed by the WHO and multiple scientific societies.
ISBAR (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)	Variant of SBAR that adds 'Identify' at the beginning, identifying the speaker and patient.	This step ensures correct identification of the patient.
ISBAR (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)	It is a variant of SBAR created by the Hunter-New England Area Health Service that adds 'Introduction' to introduce the speaker.	It arises from the initiative 'ISBAR revisited'.
SBAR-R (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)	It is a variant of SBAR that adds 'Readback' at the end. Readback involves the recipient repeating or summarising information to confirm understanding and accuracy.	This technique helps reduce communication errors by repeating the message to the receiver.

<p>ISBARR (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)</p>	<p>It is a variant of SBAR that adds both 'Identify' and 'Readback' at the end, thus combining the importance of correct identification with final verification.</p>	<p>It helps reduce communication errors by repeating the message to the recipient, in addition to highlighting identification.</p>
<p>iSoBAR (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)</p>	<p>The acronym stands for Identify, Situation, Observation, Background, Agreed plan, and Readback.</p>	<p>Initially designed for interhospital telephone handovers (X).</p>
<p>ISOBAR (Australian Commission on Safety and Quality in Health Care, 2010; Müller et al., 2018)</p>	<p>The acronym stands for Identify, Situation and Status, Observations, Background and History, Assessment and Actions, and Responsibility and Risk Management.</p>	<p>It has its own section in which the continuous assessment, severity and alert criteria are highlighted.</p>
<p>I-PASS (Hughes, Serwint, O'Toole, et al., 2019; Hughes, Serwint, O'toole, et al., 2019; O'toole et al., 2019)</p>	<p>It uses a mnemonic consisting of severity of Illness severity, Patient summary, Action list, Situation awareness and contingency planning, and Synthesis by receiver.</p>	<p>It is an evidence-based information transfer program. Designed by and for medical residents.</p>
<p>NBSR (Groves et al., 2016)</p>	<p>The Nursing Bedside Shift Report is a safe method endorsed by the Agency for Healthcare Research and Quality (AHRQ).</p>	<p>There is no paediatric adaptation or validation. It is a safer method, as it involves families.</p>

m-ISHAPED (Stimpson et al., 2020)	Designed for bedside shift transfer by nurses. The acronym stands for modified ISHAPED: Introduction, Story, History, Assessment, Plan, Error Prevention, and Dialogue.	It has been tested in paediatrics in the transfer of patients between units.
SAFETIPS (Solan et al., 2014)	The standard SAFETIPS format stands for Statistics, Assessment, Focused plan, pertinent Exam findings, To dos, If/thens, Pointers/Pitfalls, and Severity of illness. It was designed for recording the on-call handover of paediatric residents in hospitalisation.	The format and its training package were designed by the Medical College of Wisconsin.

4.2. Assessment of Patient Handoffs

Tools have been described in the literature to assess the quality of nursing patient handover, with different methodologies to evaluate its characteristics, such as the environment in which it takes place, the information provided, the time invested, or the personal perception (Brown & Sims, 2014; Ferrara et al., 2017; Yáñez-Corral & Zárate-Grajales, 2016).

The Handover Evaluation Scale (HES) tool is used to assess the quality of patient handover. Brown et al. examined the quality of handover in neonatal units and collected demographic information in relation to the quality of information, interaction and support, efficiency, and parental inclusion (Brown & Sims, 2014). The authors concluded that the HES tool is a valid measure for monitoring and assessing the transfer process. The application of this scale resulted in the transmission of high-quality information, which the authors linked to the use of each professional's particular methods for the handoff, such as the SBAR tool or the use of electronic media (Brown & Sims, 2014).

Another tool for assessing the quality and characteristics of the handover is the Handoff CEX Scale, which has been validated for use in English and Italian. This scale assesses location, organisation, communication skills, content, clinical judgment, and humanistic and professional qualities. The scale also features a second phase which is to be performed by the information recipient, which includes the same number of items but with different content. Each item was rated on a Likert scale ranging from 1 to 9 (Ferrara et al., 2017).

Yáñez-Corral et al. also studied how to assess the quality of patient handover (Yáñez-Corral & Zárate-Grajales, 2016). In this case, they developed a measurement instrument with the aim of improving safety, avoiding repetitions, and work overload, while making it adaptable to different populations based on patient types. Sociodemographic data, structure of the patient handover (time, place, etc.), the process to be followed (interventions, procedures, examinations, and pending tests), and observations were included. The authors concluded that the instrument is valid and reliable for use in similar settings. When applying this scale to their study population, Brown et al. concluded that the quality of the handover was not adequate due to the amount of relevant information lost in the process (Yáñez-Corral & Zárate-Grajales, 2016).

In other studies, the authors assessed handover quality by direct observation, transfer of documents and recordings of oral handovers, or self-administered Likert scales (Hughes, Serwint, O'toole, et al., 2019; O'toole et al., 2019; Solan et al., 2014; Starmer et al., 2014). In some cases, these scales were administered before and after a patient handoff quality improvement intervention, which helped to assess participants' perceived quality of the handover process (Solan et al., 2014).

4.3. Limitations

Firstly, the main limitation of our study may be that the results can only be applicable to the paediatric setting, as most studies took an adult-derived approach without a methodologically acceptable validation. In addition, the low quality of the evidence may have affected the validity of the results and conclusions of this review.

Secondly, the participation of only four authors in the review may have limited the diversity of perspectives and completeness of the data analysis, despite articles being read and assessed independently. Thirdly, a limited number of databases were selected to enhance operability, which could have restricted access to a wider range of relevant studies. We sought to resolve this by using the major databases and broadening the scope of the research question. Fourthly, the broad scope of the review question may also have made it difficult to focus on specific aspects of patient handover in paediatric nursing, affecting the depth of the results.

Finally, the low methodological quality in study selection, data extraction, and synthesis of results may have negatively affected the validity and reliability of the review, which should be considered when interpreting the study findings and conclusions.

4.4. Applicability

Our results were grouped by the main existing tools for standardising patient handover in paediatric hospitalisation. The implementation of these tools will improve the quality of patient handoff, nurses' satisfaction with the communication process, and reduce communication errors, thus enhancing patient safety.

In turn, the validated tools for assessing the quality of patient handoff will make it possible to identify any deficiency in the transfer process, establish a baseline level, and assess the effectiveness of improvement interventions. In addition, these tools enable different professionals, environments, and moments in time to be compared, while also paving the way to continuous monitoring through audit programs.

As future lines of research, further studies are needed to adapt the tools associated with adult patient handoff to the paediatric setting, but also to agree and validate its content and effectiveness, which may require experimental studies.

Due to the different places of publication of most of the existing tests, it is necessary to translate the retrieved instruments and tools into different languages to promote their use and the design of implementation studies. In addition, they are to be adapted and validated to the context of each unit.

Finally, new instruments based on the latest evidence, expert consensus, and content validation should be developed to address the specific needs of certain units and/or their characteristics.

5. Conclusions

In light of the findings obtained from our integrative review of standardisation strategies for patient handover in paediatric nursing, it has been shown that there is a need to focus on the continuous improvement of communication during this crucial process in healthcare. Despite the methodological limitations identified in the reviewed studies and the diversity of approaches taken in them, it is safe to say that implementing validated tools and standardised protocols to optimise the transfer of information between nursing professionals in paediatric settings is of paramount importance.

In addition to contributing to the reduction of potential miscommunication, this approach stands as a fundamental pillar to enhance patient safety, boost job satisfaction among nursing professionals, and ultimately, improve the quality of care provided to paediatric patients.

Against this backdrop, there is a promising future for the handover of paediatric nursing patients, which encourages professionals to actively explore new avenues for the development and validation of specific structuring and standardisation tools.

The development of innovative tools supported by scientific evidence and the consensus of the nursing community can not only improve the quality of care provided to paediatric patients, but also represents a unique opportunity to contribute significantly to the continuous improvement of patient safety and the effectiveness of nursing care in the hospital setting.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/doi/s1>, Figure S1: title; Table S1: title; Video S1: title.

Author Contributions: Conceptualization, P.B. and L.G.; methodology, P.B. and L.G.; software, P.B. and M.D.; validation, P.B. and L.G.; formal analysis, P.B. and M.D.; investigation, P.B., L.G. and M.D.; resources, P.B.; data curation, P.B. and M.D.; writing—original draft preparation, P.B.; writing—review and editing, P.B., L.G. and M.D.; visualization, P.B. and M.D.; supervision, L.G. and M.D.; project administration, P.B.; funding acquisition, P.B. All authors have read and agreed to the published version of the manuscript.

Funding: This study was supported by the Spanish General Council of Nursing and the Foundation Instituto Español de Investigación Enfermera (2023).

Institutional Review Board Statement: Not applicable.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Public Involvement Statement: No public involvement in any aspect of this research.

Guidelines and Standards Statement: This manuscript was drafted against the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guideline (Tricco et al., 2018) for scoping review research.

Use of Artificial Intelligence: AI or AI-assisted tools were not used in drafting any aspect of this manuscript.

Conflicts of Interest: The authors declare no conflicts of interest.

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