CONSTRUCTION AND VALIDATION OF CHECKLIST FOR TRANSFER OF CARE AT DISCHARGE OF THE POST-ANESTHETIC RECOVERY ROOM¹

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ABSTRACT

Objective: To construct and validate checklist for communication in the transfer of in-hospital care of surgical patients discharged from the Post-anesthetic Recovery Room. Method: Methodological study conducted in two perioperative units of a tertiary school hospital, public, of regional coverage, from July 2020 to October 2021, in two stages: 1) preparation of the checklist with textual and integrative review, and meeting with experts in perioperative nursing; 2) validation, consisting of content analysis by panel of experts and pre-test with perioperative nurses. Items with minimum agreement of 0.80 were considered valid. Results: Checklist composed of 60 items and 127 sub-items, subdivided into four domains that form the mnemonic “IPRA”, I = patient identification, P = preoperative, R = performed in the surgical center and A = discharge from the post-anesthetic recovery room. All elements of the checklist obtained Content Validity Index above 0.95, being the general 0.99. Conclusion: The checklist was considered valid and can be used to promote communication in the transfer of care of the surgical patient at discharge from the post-anesthetic recovery room.

Keywords: Patient safety. Communication. Patient transfer. Checklist. Validation study.

INTRODUCTION

The World Health Organization (WHO) defined concepts related to safe care, including effective communication, which is considered a determinant of quality and safety in health care¹. Factors inherent to the complexity of the hospital environment and the lack of standardization impair its dynamics among health professionals, being one of the main elements that predispose to the occurrence of adverse events²-⁴.

Communication is a factor that interferes with the transfer of in-hospital care⁵. In the perioperative period, the patient’s transfer between teams is inherent, being one of the critical points for his safety, and little discussed in the literature, the discharge from the Post-Anesthetic Recovery Room (PARR). During this process, the information transmitted impacts on the planning of the continuity of postoperative care in the destination unit, being essential the qualification and improvement of professionals in its execution⁶,⁷.

The Joint Commission International (JCI) indicates tools, standardized approaches to care transfer and use of mnemonics with priority information topics. Its absence poses a risk to patient safety because it depends on the subjectivity of the individuals who communicate, allowing omission of important items, providing incidents and discontinuity of care⁸-¹⁰.

The standardization and structuring of
content in mnemonics as a communication technique improves the exchange of information, especially the SBAR (Situation, Background, Assessment, Recommendation) and its variations ISBAR, ISOBAR (9); the I PASS the BATON (Illness Severity, Patient Summary, Action List, Situation, Safety Concerns, Background, Actions, Timing, Ownership, Next), and its contraction I PASS (10); and 5Ps (Patient, Plan, Purpose, Problems, Precautions) (10), among others, as proposals to systematize communication. Although they are generalizable and can be adapted, they are not specific to the perioperative environment, denoting a gap.

The improvement of communication among health professionals is an international goal of the WHO for patient safety, assumed in our environment (12). From this context, the objective of this study was to construct and validate a structured mnemonic checklist for communication in the transfer of in-hospital care of the surgical patient discharged from the Post Anesthetic Recovery Room.

METHOD

Methodological study of construction and validation of a checklist structured in a mnemonic optimizer of the transfer of in-hospital care of the surgical patient at discharge from the PARR. The following steps were followed: 1) preparation of the checklist: textual and integrative review, with survey of items and recommendations of best practices in the transfer of care, and individual meeting with experts in the area of perioperative nursing; 2) checklist validation: analysis of content adequacy by expert panel and pre-test tool with perioperative nurses.

The research was developed in the perioperative units: PARR, consisting of 14 beds, with a nursing team composed of 20 nurses and 28 nursing technicians; and surgical hospitalization (UCir), with 52 beds attended by 25 nurses, 44 technicians and two nursing assistants. These units are part of a public school hospital in the state of Rio Grande do Sul, a reference in high complexity for the central region. Stage 1 was held from July 2020 to February 2021, while Stage 2, from March to October 2021.

The first stage, preparation of the checklist, had a textual review seeking publications on the websites of SOBECC (Brazilian Society of Nurses of Surgical Center and Center of Material and Sterilization - Sociedade Brasileira de Enfermeiros de Centro Cirúrgico e Centro de Material e Esterilização), WHO, JCI-Brazil, ONA (National Accreditation Organization), REBRAENSP (Brazilian Network of Nursing and Patient Safety - Rede Brasileira de Enfermagem e Segurança do Paciente), COFEN (Federal Nursing Council - Conselho Federal de Enfermagem) and PROQUALIS (production and dissemination of information and technologies in quality and patient safety), identifying standards and recommendations for best practices in the transfer of care, especially for surgical patients.

Also, with an integrative review following the recommended steps for this modality and a review question formulated from the PICo acronym (13). The following population/participants were chosen: health workers, patients; phenomenon of interest/intervention: protocols, checklists; study context: PARR; and outcome: transition of care. In order to answer the question: What information is essential to ensure the safety of the surgical patient and the continuity of care at discharge from the PARR to the hospitalization unit?

The search for productions occurred in the databases: Latin American and Caribbean Literature in Health Sciences (LILACS) and Nursing Database (BDENF), via Virtual Health Library, and Medical Literature Analysis and Retrieval System Online (MEDLINE), via PubMed. The following advanced search strategy was applied, combined with Health Sciences Descriptors (DeCS), terms MESH (Medical Subject Headings) and the Boolean operators “AND” and “OR”: “Surgical patient” AND “Checklist” OR “Protocols” OR “Checklist” OR “Checklist” AND “Anesthesia recovery period” OR “Operating rooms” OR “Post anesthetic recovery” OR “Transition of patient responsibility” OR “Transitional care” OR “Handoffs”.

Thirty-three articles were selected for full reading by two reviewers: author and co-supervisor. After, in a consensus meeting with the study advisor, those who did not contemplate
the research question were excluded, and the final sample consisted of eight publications.

The results from the literature reviews were presented and discussed with experts in the surgical area by the author of the research, in individual meetings, due to the context of the COVID-19 pandemic, contacted through a letter the objective of the research and the expected contribution of them. The selection of participants occurred by intentional non-probabilistic sampling, with parity of representatives of the units surveyed. Selection criteria were: to be a nurse of the PARR or UCir, with minimum experience of one year. It was obtained the participation of 20 nurses, ten from each sector.

At this stage, three open questions were listed, in order to know the dynamics used in the transfer of care, named in the service as a shift passage, namely: “Today, how is the shift handoff of the patient discharged from the PARR performed/received?”; “Is any method used to structure communication?”; and “What information do you consider important to be transmitted/received in order to ensure continuity/planning of care and patient safety at discharge from PARR?”. Participants responded, according to individual expertise and evidence found in the literature, identifying in praxis the domains and security items to compose the checklist. The answers were recorded in application for smartphone with Android operating system and later transcribed in full. At the end of this process, the first version of the mnemonic/checklist was created, and also icons that reference each domain.

The second stage was validation of the checklist by a panel of experts. There were proposals that suggest six to 20 participants\(^{14,15}\), being considered for the study the quantitative of ten individuals. Care nurses and hospital managers were invited, as well as medical-surgical and patient safety teachers from the central region of Rio Grande do Sul, eligible after consulting the personal curricula available in the Lattes/CNPq Platform. The inclusion criteria were adapted from Bezerra\(^{16}\), considering titration, publications and experience in the surgical area and patient safety, defining the minimum score of 4 points to be considered a specialist in the area.

After capturing the phone numbers through the researchers’ networks, an invitation was sent via instant messaging application to ten experts, who agreed to participate in the study. Their electronic addresses were requested and a digital file containing: Informed Consent Form (ICF), a questionnaire for collecting sociodemographic and labor data, and the first version of the checklist was sent, validation instrument and guidelines for completion. The deadline of 20 days from the sending of the email to return the answers was stipulated, and can be extended twice for the same period, according to the individual need of each participant, considering the overload of activities due to the context of the COVID-19 pandemic. The experts evaluated checklist as a whole, determining its scope, that is, whether each dimension was properly elaborated by the set of items and sub-items that compose it, the letters that are part of the mnemonic and icons created to provide memorization; and whether all processes of care transfer were contemplated in the established domains. They were able to include, delete, modify and suggest amendments. They also judged the clarity and relevance of the items, using a Likert scale with four support levels: 1 – Inadequate; 2 – Inadequate; 3 – Adequate; 4 – Totally adequate; for each domain, icon, mnemonic letter, item and subitem. After this step the second version of checklist was developed.

Next, there was the pre-test with nurses from SRPA and UCir. They received a questionnaire for sociodemographic characterization, the second version of the checklist with evaluation form and guidelines for completion. The checklist was evaluated for clarity and ease of use at the time of patient transfer at discharge from the PARR. As well as its use as a guide for verbal communication and as a subsidy for the planning of care, by the nurse of the hospitalization unit. The criterion for inclusion of the participant was to be a care nurse in these units. Also performed by non-probabilistic sampling, the invitation was made in the shift changes, until reaching at least half the number of nurses in each sector. Thirty-five nurses participated in this stage, 13 from the first and 22 from the second unit.

The characterization data of the participants

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were compiled and analyzed in a Microsoft Excel® spreadsheet. After checking for typing errors or inconsistencies, the analysis was performed using absolute frequencies (n), relative frequencies (%) and means, according to the type of variable. Content validation occurred in two moments: 1) feedback from the expert panel; 2) pre-test result. Having been measured by the Content Validity Index (CVI), which measured the proportion of experts who were in agreement with the items and dimensions of the checklist [17].

A Likert scale, ranging from 1 to 4, was used to evaluate the elements of the checklist, being considered the highest scores as adequacy for its validation. Elements with score 1 or 2 would be reviewed, adjusted and reassessed. To evaluate the checklist as a whole, the “mean values of the items calculated separately” were used; that is, all CVIs were added separately, divided by the number of items considered in the evaluation. Ideal agreement was considered when the CVI was equal to or greater than 0.80, both for evaluation of each item and for general evaluation of the checklist. When less than 0.80, re-evaluation would be carried out.

The ethical aspects were respected, with the study approved by the Research Ethics Committee of the Federal University of Santa Maria, under the number CAAE 41611420.6.0000.5346 and Opinion n. 4499540, of January 15, 2021.

RESULTS

Stage 1. Preparation of the checklist

The literature review demonstrated that the systematization of the process of transfer of care, anchored in established criteria, recommendations of certifying bodies engaged in the quality of health care and patient safety, protocols and checklists validated, is consolidated and benefits the work of the health team and the promotion of patient safety culture. Also, digital technologies stood out instead of printed media, for allowing the optimization of time.

The meeting with experts in perioperative nursing had 20 nurses, ten from each sector, most of them female (n=16; 80%), aged 37 to 41 years (n=6; 30%), graduation time from 11 to 15 years (n=12; 60%), with postgraduate residence/specialization type (n=13; 65%), active at night (n=7; 35%) and with a weekly workload of 36 hours (n=17; 85%).

From the answers to the questions, the safety items to be communicated in the transfer of care were identified. They were analyzed along with the data from the literature reviews, resulting in the first version of checklist, composed of 73 items and 127 sub-items, categorized into four domains with information: patient identification, preoperative, surgical anesthetic procedure and operating room (OR) and patient conditions at discharge from PARR. It was not identified in the answers the use of method or validated tool to structure the communication. It was created, then, with the initial letters of the domains, the mnemonic to organize and direct the reasoning for the security items. It was called mnemonic “IPRA”, being the letter I = identification of the patient, P = preoperative, R = performed in the surgical center and A = discharge of the PARR.

In order to generate visual identity and facilitate its memorization, icons were created that reference each checklist domain.

Stage 2. Validation of the checklist

The expert panel consisted of ten nurses. The largest portion aged between 26 and 30 years (n=3; 30%); graduation time between 11 and 15 years (n=4; 40%); who had a doctorate (n=6; 60%); professional time from six to ten years (n=5; 50%); and weekly workload of 40 hours (n=8; 80%).

In the content validity analysis, all elements of the checklist reached the proposed CVI as an agreement criterion, both for clarity and for relevance. The mean for clarity was 0.98 and for relevance was 0.99. Overall CVI was 0.98. There were suggestions and comments regarding the disposition, correction of some terms and better writing of items and sub-items, which were analyzed along with the definition of domains and competences and the evidence found in the literature. After adjustments and formatting in A4, the second version of checklist was created, forwarded to the pre-test.

Thirty-five nurses participated in the pre-test, the largest portion of the female sex (n=30;
85.7%), aged between 34 and 40 years (n=15; 42.9%), graduation time between 11 and 15 years (n=14; 40.0%), with specialization/residency postgraduate type (n=23; 65.7%) professional work between four and ten years (n=17; 48.5%), in mixed shift (n=12; 34.3%) and with weekly workload of 36 hours (n=29; 82.8%). At this stage, all checklist elements obtained CVI above 0.95 for clarity. The overall CVI was 0.99. Suggestions and comments were evaluated by the researchers, taking into account the pertinence and physical space in the instrument, maintaining the version referred to the pre-test, presented in Figure 1.

Figure 1. Checklist for transfer of care at PARR discharge. Santa Maria/RS, 2022.

It was also elaborated a guide, presented in Figure 2, to support verbal communication and the construction of new checklists, which meet the needs of other hospital institutions. It
presents the method for transferring the care of the surgical patient, denominated by the mnemonic “IPRA”; it contains the domains and main validated items that can be used in full or adapted to the particularities of each post-anesthetic recovery service.

**Figure 2.** Guide to support the construction of checklists and verbal communication in the transfer of in-hospital care of the surgical patient at PARR discharge. Santa Maria/RS, 2022.

**DISCUSSION**

The construction of the checklist for transfer of care at discharge from the PARR resulted from a search for good practices in the transfer of care and patient safety by organizations that work for this purpose, and from an integrative review, thus synthesizing the best evidence on the subject. These subsidies and the contributions of experts in surgical nursing enabled its construction and subsequent content validation by a panel of experts and perioperative nurses. Thus, important quality criteria regarding the construction and validation of constructs were considered.

In all phases of the research, the checklist was considered valid as a technology for patient safety in internal transfers at discharge from the
PARR, surpassing the required cutoff point. This reveals that this instrument can be used as a tool to promote communication between teams and, consequently, improve patient safety.

The first domain of the checklist is “patient identification”, whose mnemonic letter is “I” and has corresponding icon that draws attention to the identification bracelet. It consists of an international goal of patient safety, with strategies for its application, such as keeping the patient’s wristband with at least two identifiers and identification plate at the bedside\(^1\). It also meets, in its scope, the National LGBT Health Policy (18), which guides this right to the person in issues related to gender identity.

The second domain of the checklist is “preoperative”, with the letter of the mnemonic “P” and identified by the icon that refers to data collection, the first stage of the Nursing Process\(^19\). This ensures that information relevant to the perioperative context is not lost, such as comorbidities and use of medications, for example, as well as the condition indicative of surgery.

The third domain is “performed in the SC”, identified by the letter of the mnemonic “R” (from Portuguese “realizado no CC”), having as icon a figure that recalls the surgical anesthetic procedure. This domain includes information regarding the procedures performed and other information from the OS, thus providing clarity of data on anesthesia, surgery and possible complications in the intraoperative period.

The fourth domain is “PARR discharge”, whose mnemonic letter is “A” (from Portuguese “alta da SRPA”) and has an icon that refers to the nurse, with checklist items checked. This domain provides information on the patient’s conditions at the time of discharge: changes that may have occurred, use of medical devices and guidance related to transportation and care in the immediate postoperative period. That is, supporting, along with the other domains, the planning of care of the user at the time of transfer to the hospitalization unit.

In the pre-test, checklist obtained maximum CVI in 15 of the 16 sets of items evaluated: domains, mnemonic letters, icons and items/sub-items. Therefore, the researchers did not deem it necessary new adequacy, keeping this as the final version, composed of 60 items and 127 sub-items, thus distributed in the domains: identification, with 11 items and five sub-items; preoperative, with seven items and 13 sub-items; performed in SC, with eight items and 17 sub-items; and high SRPA, with 34 items and 92 sub-items.

The checklist proved to be comprehensive, covering several checkable safety items and some describable that include aspects to be reported in the transfer of care and that impact on the planning of the postoperative period in the hospitalization unit. Thus, in all phases of the checklist development, essential items for the transfer of care of the surgical patient were prioritized, safely, prioritizing assertive communication, understood by the interlocutors in verbal and written forms, understanding that such a tool should be objective, so that its use is not an obstacle to good practices in health or burdens the time of professionals, already exposed to overload and stressors\(^20\-22\).

In order to organize the checklist in A4 format, using a standard writing paper, the objective was an attractive layout, with writing inspired by the “Tall Man lettering”\(^23\), and alternating shading lines was also used to highlight each item and its sub-items, with scales of black color. In the researched institution is implanted the checklist of safe surgery\(^24\) printed equally in a standard writing paper, and its back can be used as a strategy to optimize the adherence to both checklists and not add cost to the institution.

Subsequently, a computerized version, in the care management application, could make the checklist self-administered with information recorded in the patient’s electronic medical record, possibilities that contribute to the improvement in communication and safe transfer of the patient to the hospitalization unit.

It is also understood that its inclusion in the Routine Management Manual (MGR - Manual de Gerenciamento de Rotina), detailed in standard operating procedure (POP - procedimento operacional padrão), as well as inclusion in the permanent education plan are favorable strategies for its adherence. With this, there will be reinforcement of its character as a safety and quality tool in surgical patient care. Maintaining the team’s engagement in favor of patient safety is a constant, because even with
the checklist of safe surgery, consolidated in the mitigation of surgical risks, there are incompleteness and inconsistencies in its filling.

Checklists are important patient safety tools. When used, they reduce failures in care and contribute to service excellence. There are few references in the scientific literature in the context of discharge from PARR in relation to the preoperative and transoperative periods, highlighting the Systematization of Perioperative Nursing Assistance, whose stage of pre-visit the use of charts and checklists to record relevant information to the surgical center team, in the same sense, the evaluation and completion of the pre-anesthetic form by the anesthesiologist configures if it is an important communication tool for the operative period, as well as the checklist for safe surgery.

The patient in the immediate postoperative period requires vigilance and attention to signs of complications related to the surgical anesthetic procedure. Therefore, a material validated by specialists, such as this checklist, favors postoperative care.

Moreover, the transfer of care at discharge from PARR is a critical moment, where communication failure can lead to serious adverse events with fatal consequences, being the lack of standardization in the transfer process and the lack of recognition of its importance by the professionals involved weaknesses that need to be mitigated. Therefore, the use of checklist is a security strategy for professionals and users, as well as contributing to the quality of care provided.

It is believed that instruments such as the one presented in this study can qualify intra-hospital transfers of patients, in this context, in the institution, since there is no standardization, practice and verbally oriented to the nurse who arrives at the service. Therefore, there will be a stimulus to promote a culture of patient safety and qualification of care provided.

In addition, the content of the support guide provides opportunities for other post-anesthetic recovery services to use the “IPRA” method to systematize verbal communication in the institution. And that they can also build their own tools for transferring care, involving professionals who participate in this process, adapting it to institutional needs.

Finally, the fact that the study was carried out during a pandemic, making workshop or focus group interactions impossible, techniques that allow the discussion of the topic among research participants, may represent limitations. There was also a need to adapt deadlines in the stages, which reflected in the extension of the study development period.

CONCLUSION

The checklist for communication in the transfer of care of the surgical patient was considered valid, after undergoing a rigorous process of construction and content validation. It includes 64 items and 145 sub-items, subdivided into four domains that form the mnemonic “IPRA”, being: I = patient identification, P = preoperative, R = performed in the surgical center and A = discharge from the PARR. This tool can be used, in print or online, in the context of anesthetic discharge and internal transfer of the surgical patient, since the work process, health care and patient safety are favored.

CONSTRUÇÃO E VALIDAÇÃO DE CHECKLIST PARA TRANSFERÊNCIA DO CUIDADO NA ALTA DA SALA DE RECUPERAÇÃO PÓS-ANESTÉSICA

RESUMO

Objetivo: Construir e validar checklist para comunicação na transferência do cuidado intra-hospitalar do paciente cirúrgico e alta da Sala de Recuperação Pós-Anestésica. Método: Estudo metodológico realizado em duas unidades periorperatórias de um hospital-escola terciário, público, de abrangência regional, no período de julho de 2020 a outubro de 2021, em duas etapas: 1) elaboração do checklist com revisão textual e integrativa, e reunião com experts em enfermagem perioperatoria; 2) validação, composta por análise de conteúdo por painel de especialistas e pré-teste com enfermeiros perioperatórios. Consideraram-se válidos itens com concordância mínima de 0,80. Resultados: Checklist composto por 60 itens e 127 subitens, subdivididos em quatro domínios que formam o mnemônico “IPRA”, sendo I = identificação do paciente, P = pré-operatório, R = realizado no centro cirúrgico e A = alta da sala de recuperação pós-anestésica. Todos os elementos do checklist obtiveram Índice de Validade de Conteúdo acima de 0,95, sendo o geral de 0,99. Conclusão: O checklist foi considerado...
válido e pode ser utilizado para favorecer a comunicação na transferência de cuidado do paciente cirúrgico na alta da sala de recuperação pós-anestésica.

**Palavras-chave:** Segurança do paciente. Comunicação. Transferência de pacientes. Lista de checagem; Estudo de validação.

**CONSTRUÇÃO Y VALIDACIÓN DE CHECKLIST PARA LA TRANSFERENCIA DEL CUIDADO EN EL ALTA DE LA UNIDAD DE RECUPERACIÓN POSTANESTÉSICA**

**RESUMEN**

**Objetivo:** construir y validar checklist para la comunicación en la transferencia del cuidado intraoperatorio de un hospital-escuela terciario, público, de alcance regional, en el período de julio de 2020 a octubre de 2021, en dos etapas: 1) elaboración del checklist con revisión textual e integradora, y reunión con expertos en enfermería perioperatoria; 2) validación, compuesta por análisis de contenido por panel de expertos y prueba previa con enfermeros perioperatorios. Se consideraron válidos los ítems con concordancia mínima de 0,80. **Resultados:** checklist compuesto por 60 ítems y 127 subelementos, subdivididos en cuatro dominios que forman el mnemónico "IPRA", siendo I = identificación del paciente, P = preoperatorio, R = realizado en el centro quirúrgico y A = alta de la unidad de recuperación postanestésica. Todos los elementos de checklist obtuvieron índice de Validez de Contenido por encima de 0,95, siendo el general de 0,99. **Conclusión:** el checklist fue considerado válido y puede ser utilizado para favorecer la comunicación en la transferencia del cuidado del paciente quirúrgico en el alta de la unidad de recuperación postanestésica.

**Palabras clave:** Seguridad del paciente. Comunicación. Transferencia de pacientes. Lista de chequeo. Estudio de validación.

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