INTEGRATIVE LITERATURE REVIEW ARTICLE

NURSING DIAGNOSTICS IN NEUROSURGERY POST-OPERATIVE DIAGNÓSTICOS DE ENFERMAGEM EM PÓS-OPERATÓRIO DE NEUROCIRURGIA DIAGNÓSTICO DE ENFERMERÍA EN EL POSTOPERATORIO DE NEUROCIRURGÍA

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ABSTRACT

Objective: to verify nursing diagnoses in patients in the postoperative period of neurosurgery. **Method:** this is a bibliographic, descriptive, integrative literature review study, searching the LILACS, CINAHL databases and the SciELO Virtual Library. The results were presented as figures. **Results:** a total of 256 articles were found. At the end, three were included, with levels of evidence B2 and B3. Regarding the type of design, two prospective cross-sectional studies and the third retrospective study were characterized. The ten ND found predominantly related to the domains “activity / rest” (domain 4) and “safety / protection” (domain 11), with four NDs in each. **Conclusion:** we identified, although the publications are still scarce, specifically proposed for the care of patients in the postoperative period of neurosurgery. It is essential, among the actions of nurses in the perioperative period, the identification of diagnoses and the appropriate planning of nursing care to thus meet the needs of each patient holistically. **Descriptors:** Nursing Care; Perioperative Nursing; Nursing Diagnosis; Perioperative Period; Standardized Nursing Terminology; Neurosurgery.

RESUMO

Objetivo: verificar os diagnósticos de enfermagem em pacientes em pós-operatório de neurocirurgia. **Método:** trata-se de um estudo bibliográfico, descritivo, tipo revisão integrativa da literatura, com a busca nas bases de dados LILACS, CINAHL e na Biblioteca Virtual SciELO. Apresentaram-se os resultados em forma de figuras. **Resultados:** encontraram-se, no total, 256 artigos. Incluíram-se, ao final, três, com níveis de evidência B2 e B3. Caracterizaram-se, quanto ao tipo de delineamento, dois estudos como transversal prospectivo e o terceiro, retrospectivo. Apresentaram-se os dez DE encontrados predominantemente relacionados aos domínios “atividade/repouso” (domínio 4) e “segurança/proteção” (domínio 11), com quatro DE em cada. **Conclusão:** identificaram-se, embora ainda sejam escassas as publicações, DE propostos especificamente para o cuidado ao paciente em pós-operatório de neurocirurgia. Torna-se imprescindível, dentre as ações do enfermeiro no momento perioperatório, a identificação dos diagnósticos e o planejamento, de forma apropriada, do cuidado de Enfermagem para, assim, atender às necessidades de cada paciente de forma holística. **Descritores:** Cuidados de Enfermagem; Enfermagem Perioperatória; Diagnóstico de Enfermagem; Período Perioperatório; Terminologia Padronizada em Enfermagem; Neurocirurgia.

RESUMEN

Objetivo: verificar los diagnósticos de enfermería en pacientes en el postoperatorio de neurocirugía. **Método:** este es un estudio de revisión bibliográfica, descriptivo, integrador de la literatura, que busca en las bases de datos LILACS, CINAHL y la Biblioteca Virtual SciELO. Los resultados se presentaron en forma de figuras. **Resultados:** se encontraron un total de 256 artículos. Al final, se incluyeron tres, con niveles de evidencia B2 y B3. En cuanto al tipo de diseño, se caracterizaron dos estudios transversales prospectivos y el tercer estudio retrospectivo. Los diez ND se encuentran predominantemente relacionados con los dominios “actividad / descanso” (dominio 4) y “seguridad / protección” (dominio 11), con cuatro ND en cada uno. **Conclusión:** identificamos, aunque las publicaciones aún son escasas, propuestas específicamente para la atención de pacientes en el postoperatorio de neurocirugía. Es esencial, entre las acciones de los enfermeros en el período perioperatorio, la identificación de diagnósticos y la planificación adecuada de la atención de Enfermería para satisfacer las necesidades de cada paciente de manera integral. **Descriptores:** Atención de Enfermería; Enfermería Perioperatória; Diagnóstico de Enfermería; Periodo Perioperatorio; Terminología Normalizada de Enfermería; Neurocirugia.

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INTRODUCTION

It is known that neurological diseases have considerable epidemiological importance and social magnitude in the Brazilian population, considering the morbidity picture composed of high prevalence of people with neurological sequelae and high mortality rate. According to the Mortality Information System, in 2018, 1,137 people died in Brazil as a result of nervous system diseases.¹ World Health Organization (WHO) estimates show a tendency towards a progressive increase in the number of deaths attributed to cerebrovascular diseases, which will probably reach 12.2% of world mortality by 2030.²

In Brazil, 5,810 new cases of Central Nervous System (CNS) cancer are estimated in men and 5,510 in women for each year of 2018-2019. These values correspond to an estimated risk of 5.62 new cases per 100 thousand men and 5.17 per 100 thousand women, corresponding to tenth and ninth positions, respectively.³

Currently, stroke is the main cause of death, surpassing coronary diseases.⁴ Stroke is the diagnosis of 10% of total hospitalizations in the Unified Health System (UHS).⁵ In 2016, 188.2 thousand hospitalizations were registered for the treatment of ischemic and hemorrhagic stroke, in addition to 40 thousand deaths from the disease, ranking second in the ranking of the main national causes of deaths among, especially, the age group of 30 to 69 years old.⁴

In the context of neurological patients, the Nursing team participates in all stages of care, coordinating the activities of other members of the Nursing team, protecting patients from harmful factors that could harm their health and acting as a cooperative member of the Nursing team.⁶ Neurological pathologies are explained as diseases of the central and peripheral nervous system, including disorders of the brain, spinal cord, peripheral nerves, and neuromuscular junction, the treatment of which involves the identification of problems and the overall planning of treatment by a multidisciplinary team.⁷ Therefore, it becomes the Nursing team responsible for 24-hour follow-up regarding observation, evaluation, registration and intervention.⁸

The perioperative period is characterized by several risks to physical and mental integrity in view of the patient's vulnerability condition.⁹ An example is the anesthetic procedure with loss of consciousness, stress, fear and anxiety regarding the results of surgery and loss of autonomy. It is understood that this demands, from the perioperative nurse, an integral and continuous view of the needs of the patient and their family, requiring interpersonal skills, scientific knowledge

and technical competence to develop activities in an organized and systematic manner.¹⁰ It is informed that the nurse works by performing, developing and implementing a care plan in each of its phases, from preoperative, intraoperative to postoperative. In this last phase, intense care is required, requiring the nursing staff to recognize the signs and / or symptoms of these clients.

Acute perception and vigilant specialized nurse follow-up are required by the neurological patient.¹¹ It is described, for example, that the assessment of the level of consciousness through pupillary response may indicate the first sign of increased intracranial pressure, and there may be reduction with the maintenance of the head up to 30°, which will also contribute to the reestablished cerebral venous return and thus the goal of neurological monitoring by the nurse is the prevention or early diagnosis of events that may trigger secondary brain injury or aggravate existing injury.¹²

For the quality of care, the nurse needs to organize and plan care based on the application of the methodological steps for the implementation of the Nursing Process (NP), according to the resolution of COFEN- 358/2009.¹³ NP should be performed deliberately and systematically in all environments, public or private, where the care of nursing professionals is established. It is inferred, therefore, that from the implementation of the NP, the nurse has greater potential to intervene according to the patient's specificities, prevent complications and promote their rapid dehospitalization and recovery.¹⁴

It is believed that, for the implementation of effective care for neurosurgical patients, one of the essential steps in NP is the accurate identification of nursing diagnoses and, among the different standardized language systems for diagnostic identification, NANDA- International (NANDA-I). By such taxonomy, (ND) is considered "a clinical judgment of the responses of the individual, family or community to vital processes or current or potential health problems, which provide the basis for the selection of nursing interventions to achieve results".¹⁵

It is possible, through the diagnostic identification, the nurse to have a greater understanding of the phenomena that can be treated by nursing. Nurses develop clinical, interpretive, and priority-setting reasoning when determining ND, thus demonstrating skills to focus on the individual's needs, to set potentially real and effective goals and interventions.¹⁵

In the literature, there is a dearth of studies related to the determination of the diagnostic profile of the postoperative neurosurgical patient. By identifying the main NDs, it may contribute to the recognition of the specificities of nursing care

in the postoperative period, and may also assist in the dissemination of the application of a standardized language to the neurosurgical patient.

OBJECTIVE

- To verify the nursing diagnoses present in postoperative neurosurgery patients.

METHOD

It is a bibliographical, descriptive study, integrative review type. This type of study has the purpose of gathering and synthesizing research results on a particular theme or issue, in a systematic and orderly manner, contributing to the deepening of the knowledge of the investigated theme.¹⁶ This research method allows the synthesis of multiple published studies, allowing general conclusions about a particular area of study.¹⁷

The review was developed in four steps: 1. Construction of the research question; 2. Determination of inclusion and exclusion criteria; 3. Development of the search strategy and the form of critical evaluation of the studies; 4. Data collection and synthesis.¹⁸ It is thus possible, when developing the integrative review, the development with the rigor of a scientific research.¹⁹

It was proposed as a research question: “What are the nursing diagnoses observed in postoperative neurosurgery patients?”.

After choosing the research question, the following descriptors were selected: “Nursing Diagnosis”; “Perioperative Period”; “Standardized Nursing Terminology” and “Neurosurgery” with their respective standardized translations in the Medical Subject Heading (MeSH). As temporal delimitation, articles published in the last ten years (2009-2019) were used. Then, the inclusion criteria were established: articles published in English, Portuguese and Spanish, which correlate with the theme of the study and that answer the research question. Exclusion criteria were: duplicate articles, dissertations and theses / or articles that did not fit the proposed theme.

For research purposes, the Virtual Health Library (BIREME) and CAPES portals were searched for access to the LILACS (Latin American and Caribbean Health Sciences Literature), CINAHL (Cumulative Index to Nursing and Allied Health Literature) and SciELO Virtual Library (Scientific Electronic Library Online). Boolean operators AND and OR were used to perform the crossings in combination. The search was conducted from March 09 to 18, 2019.

In order to select the articles found in the search for the databases, the titles were initially

read, leaving, then, the articles corresponding to the objective of this study. Duplicate articles were later eliminated and the abstracts were read.

There were 256 articles distributed in the two databases used (LILACS - 98; CINAHL - 146) and Virtual Library (SciELO - 12). After a thorough analysis of the reading of the titles, 61 articles were excluded, and after reading the abstracts, an additional 25 articles were excluded, and after the duplication check, another 86 articles were excluded, thus leaving one total of 84 articles. By applying the exclusion criteria, 28 by the temporal criterion (more than ten years) and eight dissertations / theses were excluded, leaving 45 articles that were submitted to full reading, considering the specificity of the subject. included three articles in this review (Figure 1).

Figure 1. Flowchart of study selection according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA 2009). Rio de Janeiro (RJ), Brazil, 2019.

Thus, after completing the search for researches, which were summarized and subsequently established the conclusions, the proposed integrative review method.²⁰ After selecting the articles and categorizing the data, an instrument²¹ adapted by the researchers containing data referring to the article identification was used.

For the evaluation of the level of scientific evidence, the seven-level classification was used according to the Oxford Center for Evidence - Based Medicine categorization.²² The following are presented in the hierarchy of recommendations: Level 1 - local and current survey studies, census or randomized samples; Level 2 - systematic review of surveys that allow for matching with local circumstances; Level 3 - local study with nonrandomized sample and Level 4 - case series.

For the interpretation of the data, evaluation of the methodological rigor and bias of the

studies, the simple descriptive analysis was performed, with the presentation of the frequencies organized in two stages. First, the characterization of the selected studies was performed; In the second stage, after exhaustive reading, the analysis and description of the ND evidenced in the postoperative period and the respective domains were demonstrated in the diagnostic association chart. Thus, for the analysis and subsequent synthesis of articles obtained from the databases and the virtual library, which met the inclusion criteria, a synoptic table was built, which included the following aspects: name of the article; name of the authors; level of evidence; objectives / methods; results; recommendations / conclusions; magazine and year of publication.

RESULTS

The integrative review consisted of three articles, two from SciELO and one from LILACS. All

articles included in Brazil were published in Portuguese and in nursing journals.

Regarding the year of publication of the articles, two articles from 2014 and one from 2015 were observed.

Regarding the type of study design, two studies followed the prospective cross-sectional method and another retrospective one. It was found that

there was a predominance of diagnostic titles in the domain “Activity and Rest” and “Safety / Protection” and, as for the classification of journals, these were classified into quality strata B2 and B3. The following is a summary of the articles included in this integrative review (Figure 2).

Name of the article	Authors	Level evidence	of	Objective/method	Results	Recomendations/ Conclusions	Revista e ano de publicação
Analysis of nursing diagnosis: delayed surgical recovery of adult and elderly patients	Pereira, Santana, Santos, Soares, Amaral, Silva. ²³	B2		The aim of this study was to analyze the nursing diagnosis of delayed surgical recovery in hospitalized adults and elderly. It was a study of quantitative approach, descriptive, observational and prospective. Sample composed of 69 subjects followed from the first preoperative day, including the postoperative day, until hospital discharge. The selected clinics were the surgical specialties of: Orthopedics, Gynecology, Neurosurgery, Thoracic, Otorhinolaryngology, Bucomaxyl, Head and Neck and Urology. A data production instrument was used to assess the presence or absence of defining characteristics and related factors.	Twenty-three (33.4%) subjects were diagnosed with delayed surgical recovery. Predominantly female, the average age was 52 years old and hospitalization was 14 days. Regarding the analysis of the defining characteristics in both populations, it was observed, exclusively in the elderly, “difficulty in moving” and “needs help for self-care”. In adults: loss of appetite with nausea and discomfort. Regarding related factors, postoperative expectations were present only in adults - anxiety. And in the elderly, pain and obesity.	The presence of the diagnosis itself causes limitations in both groups, directly influencing the quality of care standards. Therefore, early diagnosis of this diagnosis in clinical nursing practice is recommended	REME jur min nurs. 2014 July/Sept.
Nursing diagnoses and proposed interventions to patient with cerebral aneurysm	Araújo, Sousa, Muniz, Oliveira, Freire Neto, Sousa. ²⁴	B3		To identify nursing diagnoses, according to NANDA taxonomy II, for the planning of nursing care in patients with cerebral aneurysm. This is a retrospective study conducted through the analysis of information contained in the medical and nursing evolutions contained in the electronic medical record of patients admitted to the Neurosurgery Clinic, who underwent surgical interventions for the treatment of cerebral aneurysm at the Base Hospital of the Federal District.	The main primary and secondary complications of cerebral aneurysm were raised. After identifying the problems, the Nursing diagnoses were identified and the relevant interventions were listed.	It is believed that this study presented the survey of the most frequent problems and interventions in patients admitted to the Neurosurgery Unit of the Federal District Base Hospital with cerebral aneurysm admitted to the Neurosurgery Unit, which will contribute to the strengthening and quality of care. of nursing. The team, by identifying the changes and complications arising from the rupture of a cerebral aneurysm, will know how to act preventively and	Com Science Health. 2014

					effectively, helping to reduce the sequelae and improve the patient's quality of life.			
Risk factors for surgical site infection in neurosurgery	Bellusse, Ribeiro, Campos, Poveda, Galvão. ²⁵	B2	To analyze risk factors for surgical wound infection in neurosurgery. Cross-sectional and prospective study. The sample type was of convenience, with the participation of 85 adult patients submitted to elective and clean neurosurgery. Research conducted to analyze the incidence of SSI after neurosurgical procedures and identify patients at high risk for developing infection.	The occurrence of surgical site infection was 9.4% (n = 8). In the bivariate analysis, it was observed that the risk factors total length of stay, body mass index, surgical size and blood transfusion were associated with the presence of infection. After adjusting the binary logistic regression model, only the total hospitalization time showed a statistically significant relationship with the presence of infection.	The occurrence of surgical site infection in neurosurgery in the institution studied was higher than recommended in the scientific literature. In the statistical analyzes employed, it was observed that the risk factors total length of stay, BMI, surgical size and blood transfusion were associated with the presence of SSD (statistically significant difference).	Acta	Paul	Nurs.
						2015		

Figure 2. Overview of articles included in the integrative review. Rio de Janeiro (RJ), Brazil, 2019.

Ten Nursing Diagnostic Titles of Neurosurgical Postoperative Patients were identified (Figure 3), but two diagnoses were repeated in the articles

selected for this study: risk of infection and delayed surgical recovery.

Domains	Nursing Diagnosis	Article 1	Article 2	Article 3	Total
Activity and rest	Risk of Ineffective Brain Tissue Perfusion (00201)	X	-	-	1
	Impaired ambulation (00088)	X	-	-	1
	Impaired bed mobility (00091)	X	-	-	1
	Impaired Physical Mobility (00085)	X	-	-	1
Elimination and exchange	Risk of constipation (00015)	X	-	-	1
Perception/Cognition	Impaired verbal communication (00051)	X	-	-	1
Security/Protection	Risk of infection (00004)	X	-	X	2
	Delayed surgical recovery (00100)	X	X	-	2
	Bleeding risk (00206)	X	-	-	1
	Impaired skin integrity (00046)	X	-	-	1

Figure 3. Diagnostic titles identified in neurosurgical patients classified according to NANDA International.¹⁵

DISCUSSION

It is understood that the identification of the specific ND of each population served is fundamental. Based on this profile, an intervention plan can be drawn up as precisely as possible to better meet the needs of patients.²⁶ The nurse should elaborate accurate ND in order to intervene in an assertive and directed manner.²⁷ It is explained that neurosurgical patients may present cognitive and sensory alterations; visual changes; motor alterations, among others. These changes represent a sample in the universe of neurological sequelae that directly interfere with daily life activity, self-esteem and sociability.²⁸

In this research, ten ND were identified with considerable frequency for the association and characterization in the postoperative period of neurosurgery, namely: Risk of constipation; Impaired physical mobility; Risk for infection; Bleeding risk; Risk of ineffective cerebral tissue perfusion; Impaired verbal communication; Impaired ambulation and impaired bed mobility; Impaired Skin Integrity and Delayed Surgical Recovery. These ND were distributed in the domains: domain 11 - Security and Protection and domain 4 - Activity and Rest, composed of four diagnoses; followed by domain 3 - Elimination and exchange and domain 5 - perception / cognition, composed of one ND each. Studies have corroborated the relevance of ND and Nursing interventions aimed at patient safety and protection due to the specificity of the clinical condition, which demands multiprofessional intensive care, length of stay, stay in intensive care unit and high morbidity and mortality.¹⁵⁻²⁹

Of the three articles included in this review, only Article 1 included the ten NDs. In Article 2, only “Delayed surgical recovery” was identified, while in Article 3, “Risk for infection” was found.

When ND was investigated in stroke patients, the diagnostic finding with 34.3% for Risk of aspiration and 30.5% developed respiratory aspiration confirmed by clinical examination. It is

noteworthy that, in the study, an association was found between the risk factor Neurological disorders and the nursing diagnosis Aspiration risk, however, these ND behaved as a protective factor.³⁰

The diagnoses related to impaired physical mobility and risk of constipation, mentioned in this study, were related to the prescribed restriction of movement, considering, specifically in the case of aneurysm, that the patient should remain at absolute rest in order to avoid rebleeding and, consequently, , rest can make peristalsis difficult, leading to constipation.

Such event is defined as the risk of decrease in the normal frequency of bowel movement, accompanied by elimination of difficult or incomplete stools and / or elimination of excessively hard and dry stools, having as main risk factors the use of anticonvulsants, physical activity, inadequate intimate hygiene and recent environmental changes.²⁴ It is believed that nurses should play their role in identifying fecaloma formation, pain control and discomfort through patient assessment and guidance, discussing with the multidisciplinary team the underlying complaints.

It is warned that neurosurgical patients have a high risk of neurological and systemic complications and, even in elective procedures, require surgical intervention and need for intensive postoperative care;³¹ thus, they are subject to the inherent morbidities of the procedure, such as secondary functional decline, prolonged immobility and length of stay in intensive care units (ICU).³²⁻³

Different reasons were found in a previous study in which the surgical procedure itself, hemodynamic instability and patient refusal restricted the removal of the bed.³⁴ Functional decline can also lead to decreased mobility, and this has often been associated with worse outcomes in hospitalized patients. It is suggested by researchers that both physiological and neurological instability in the acute postoperative

phase may increase the chances of bed restriction.³⁵

In a study developed by researchers, it was reported that extensive surgical procedure comprised another associated factor present in more than 56% of subjects with delayed surgical recovery ND. The diagnosis of delayed surgical recovery has been related to major surgeries, which in turn involve large resections and bleeding, body cavities or large vessels exposed to room temperature and thus contribute to the delay in surgical recovery.³⁶

It was evidenced by researchers, regarding the reasons for hospitalization and association of these reasons with the main organ systems involved, that 47.8% of the study population was hospitalized in the ICU due to nervous system disorders,³⁷ demonstrating the need for greater knowledge of ND to attend the population about neurological care.

According to previous studies, it is inferred that Surgical Site Infections (SSIs) in Neurosurgery are important infections due to their clinical severity. They are often associated with worse prognosis, high lethality and large number of sequelae among survivors. These infections are subdivided into superficial surgical wound infection, shunt or ventricular shunt infection, intraparenchymal abscess, and meningitis. Most neurosurgical procedures are considered “clean” with the manipulation of sterile tissues, and process failures can be particularly important.³⁸

It is noted that nursing care for neurosurgical patients performed postoperatively is almost entirely prescribed by the nurse and performed by him and / or the nursing team. Thus, educational actions are required regarding the training of these professionals, in order to obtain lower rates of SSI. It is assisted by proper daily care of the surgical incision, reduction of SSI and early detection of signs and symptoms.³⁸ Some specific domain knowledge of nurses is needed: the correct hand hygiene before performing the procedures; performing surgical dressings aseptically, among others, as this will minimize cases of neurosurgery infections, such as infections related to External Ventricular Bypass (EVB) and meningitis.³⁹⁻⁴⁰

Nurses are faced, within the neurosurgical scenario, with work that leads them to a specialized conduct according to pre-established routines with specificities. It is therefore expected that it will implement protocols in order to provide quality care to the neurosurgery client. In this sense, it is important to have a direct relationship with ND, since, by applying them, the possibility of identifying the client's weaknesses and care needs is expanded, as well as an efficient care plan. As a consequence, ND can help

strengthen nurses for decision-making and the establishment of specific interventions.²⁸

It is understood that one of the purposes of ND, as a standardized language system, is to provide nurses with better communication with other team members. It becomes possible to perceive, in the neurosurgical context, the real interest of nurses in applying ND, systematically, in order to direct care, as well as qualify it.³⁶ This assumption is based on the premise that uninterrupted care performed to neurosurgical patients allows direct observation of the patient, identifying hemodynamic responses, minimizing mobilization and manipulation, maintaining skin integrity and tracing NDs to construct interventions to be implemented individually and in a personalized way.

Selected articles were published between 2014 and 2015, demonstrating a gap of studies on the theme over a five-year interval.

Evidence-based practice is known to be characterized by surveys of clinical data in decision-making supported by increasing research. Thus, the limitations of this study are related to the scarcity of publications related to the postoperative period of neurosurgery that, for the most part, do not clearly define the operative moment in which the study was developed; Another aspect is publications with ND that do not use standardized language, only observed and monitored neurological complications.

We emphasize the importance of training and professional updating of nurses and the entire nursing team during the development and implementation of the nursing process. Therefore, it is necessary to consider the professional training time of nurses as well as the accumulated prior knowledge. The training has been a strong ally in the apprehension of knowledge, because, through courses, lectures and scientific events in general, nurses approach the ND, having a greater chance of applying them in practice.

CONCLUSION

In the three articles that made up this review, ten NDs were identified, the most frequently being “delayed surgical recovery” and “risk of infection”. In the diagnoses found, the surgical profile of neurosurgical patients is approached, although studies on neurosurgery postoperative ND were considered scarce.

It is understood that one of the main goals of postoperative care is to prevent complications and, for this, the nurse needs to have scientific knowledge about the neurological responses that may interfere with neurosurgical recovery, thus identifying its main complications and acting in an accurate way.

This review presents a compilation of studies that identified ND in patients undergoing

neurosurgery. It is hoped that this discussion will contribute to the encouragement of the implementation of the Neurosurgery Nursing process, with the use of a standardized language and diagnostic identification from the clinical evaluation, thus strengthening the quality of care provided.

Future studies are suggested to amplify discussions about the theme, contributing to the investigation of the results and interventions of postoperative neurosurgery patients.

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