

Nursing Care for Children with Autism Spectrum Disorder in Hospital Settings: An Integrative Literature Review

✉ **Íasmin Danielle Bernardo de Oliveira**

<https://orcid.org/0009-0009-3947-811X>
Universidade Federal de Alagoas, Brazil
iasmin.oliveira@eenf.ufal.br

Ivanise Gomes de Souza Bittencourt

<https://orcid.org/0000-0002-9416-3964>
Universidade Federal de Alagoas, Brazil
ivanise.gomes@eenf.ufal.br

Rayssa Francielly dos Santos Alves

<http://orcid.org/0000-0002-2992-7438>
Universidade Federal de Alagoas, Brazil
rayssa.alves@eenf.ufal.br

Thaynara Maria Pontes Bulhões

<https://orcid.org/0000-0003-2398-8173>
Universidade Federal de Alagoas, Brazil
thaynara.bulhoes@esenfar.ufal.br

Ingrid Martins Leite Lúcio

<https://orcid.org/0000-0003-2738-7527>
Universidade Federal de Alagoas, Brazil
ingridmll@eenf.ufal.br

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Theme: Care processes and practices

Contributions to the field: This research is important for nursing, as it provides insights into the research scenario in this field and nursing care directed towards the specificities of people with autism spectrum disorder (ASD) and their families. Nurses will be able to apply the systematization of nursing care, focused on the needs, potential, and specificities of autistic children during their period of hospitalization. This study contributes to the training process of healthcare professionals in child mental health and emphasizes the importance of continued health education in this field, which is still incipient.

Abstract

Introduction: Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by cognitive, communicative, and social impairments, and is classified into three levels of support. Child hospitalization, in turn, impacts the child and their family in biopsychosocial aspects, related to issues of physical health, stress, adaptation to the disease, and social interactions. In the case of autistic children, the complexity of the disorder requires hospital care adaptations. **Objective:** To describe the nursing care provided to children with ASD during hospitalization. **Materials and Methods:** This is an integrative literature review performed in July 2024, covering articles published between 2014 and 2024. The search for articles was conducted in the PubMed, ScienceDirect, Periódicos Capes, Lilacs, and BDEnf databases, using descriptors registered in MeSH/DeCS. The inclusion criteria consisted of primary studies, while the exclusion criteria consisted of academic papers, books, and book chapters. **Results:** The search and selection process for the studies in this review was organized via the Prisma flowchart, yielding 317 identified studies, of which 11 were selected. Most studies were qualitative and published in the United States. The results show the importance of individualizing care according to the specific needs of each child. In addition, visual and sensory communication strategies have been shown to be effective in reducing stress and promoting a welcoming environment. In this sense, specialized training for healthcare professionals and a multidisciplinary approach were found to be essential for improving care. **Conclusions:** The analysis of the studies reviewed highlights the importance of a personalized and patient-centered approach, as well as the need for continuous training for nursing professionals. Thus, this study contributes significantly to the growth of knowledge regarding nursing care, identifying challenges and needs, as well as proposing evidence-based interventions to improve care quality.

Keywords (Source: DeCS)

Autism spectrum disorder; child; hospitalized child; Nursing; nursing care.

4 Cuidados de enfermería a niños con trastorno del espectro autista en entornos hospitalarios: una revisión bibliográfica integradora

Resumen

Introducción: el trastorno del espectro autista es un trastorno del neurodesarrollo caracterizado por alteraciones cognitivas, comunicativas y sociales, y se clasifica en tres niveles de apoyo. La hospitalización infantil impacta al niño y a su familia en aspectos biopsicosociales, incluyendo la salud física, el estrés, la adaptación a la enfermedad y las interacciones sociales. En el caso de los niños autistas, la complejidad del trastorno requiere adaptaciones en la atención hospitalaria. **Objetivo:** describir la atención de enfermería brindada a niños con trastorno del espectro autista durante la hospitalización. **Materiales y métodos:** se trata de una revisión integradora de la literatura, realizada en julio de 2024, que abarcó artículos publicados entre 2014 y 2024. La búsqueda se llevó a cabo en las bases de datos PubMed, ScienceDirect, Periódicos Capes, Lilacs y BDeInf, utilizando descriptores registrados en los vocabularios controlados MeSH y DeCS. Como criterio de inclusión, se consideraron estudios primarios, mientras que los criterios de exclusión incluyeron trabajos académicos, libros y capítulos de libros. **Resultados:** el proceso de búsqueda y selección de estudios se organizó mediante el diagrama de flujo Prisma, resultando en la identificación de 317 estudios, de los cuales se seleccionaron 11. La mayoría de los estudios eran cualitativos y publicados en Estados Unidos. Los hallazgos evidencian la importancia de individualizar la atención según las necesidades específicas de cada niño. Además, las estrategias de comunicación visual y sensorial demostraron ser eficaces para reducir el estrés y proporcionar un ambiente más acogedor. La capacitación especializada de los profesionales de la salud y el enfoque multidisciplinario fueron identificados como fundamentales para mejorar la atención. **Conclusiones:** los estudios revisados destacan la relevancia de una atención personalizada y centrada en el paciente, así como la necesidad de una formación continua para los profesionales de enfermería. De este modo, este estudio contribuye al avance del conocimiento sobre la atención de enfermería, identificando desafíos y necesidades, además de proponer intervenciones basadas en la evidencia para mejorar la calidad de la atención.

Palabras clave (Fuente DeCs)

Trastorno del espectro autista; niño; niño hospitalizado; Enfermería; cuidados de enfermería.

Cuidado de enfermagem à criança com transtorno do espectro autista em ambientes hospitalares: uma revisão integrativa da literatura

Resumo

Introdução: O transtorno do espectro autista é um transtorno do neurodesenvolvimento caracterizado por comprometimentos cognitivos, comunicativos e sociais, e se classifica em três níveis de suporte. A hospitalização infantil, por sua vez, impacta a criança e sua família em aspectos biopsicossociais, relacionados às questões de saúde física, estresse, adaptação à doença e interações sociais. No caso de crianças autistas, a complexidade do transtorno exige adaptações no cuidado hospitalar. **Objetivo:** descrever o cuidado de enfermagem prestado à criança com transtorno do espectro autista durante a hospitalização. **Materiais e métodos:** Trata-se de uma revisão integrativa da literatura, realizada em julho de 2024, que abrangeu artigos publicados entre 2014 e 2024. A busca dos artigos foi conduzida nas bases de dados PubMed, ScienceDirect, Periódicos Capes, Lilacs e BDEnf, com a utilização de descritores cadastrados nos vocabulários controlados MeSH e DeCS. Como critério de inclusão, foram considerados estudos primários, enquanto os critérios de exclusão abrangeram trabalhos acadêmicos, livros e capítulos de livros. **Resultados:** O processo de busca e seleção dos estudos desta revisão foi organizado por meio do fluxograma Prisma, resultando em 317 estudos identificados, dos quais 11 foram selecionados. A maioria dos estudos era qualitativa e publicada nos Estados Unidos. Os resultados indicam a importância de individualizar os cuidados conforme as necessidades específicas de cada criança. Além disso, estratégias de comunicação visual e sensorial mostraram-se eficazes para reduzir o estresse e promover um ambiente acolhedor. Nesse sentido, a formação especializada dos profissionais de saúde e a abordagem multidisciplinar foram identificadas como fundamentais para aprimorar a assistência. **Conclusões:** A análise dos estudos revisados destaca a importância de uma abordagem personalizada e centrada no paciente, além da necessidade de treinamento contínuo para os profissionais de enfermagem. Assim, este estudo contribui significativamente para o avanço do conhecimento sobre os cuidados de enfermagem, identificando desafios e necessidades, bem como propondo intervenções baseadas em evidências a fim de aprimorar a qualidade da assistência.

Palavras-chave (Fonte DeCs)

Transtorno do espectro autista; criança; criança hospitalizada; enfermagem; cuidados de enfermagem.

Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by cognitive, communicative, and social impairments, which lead to difficulty in social reciprocity, decreased non-verbal communication, and difficulties in developing and maintaining relationships. The neurodevelopmental alterations that characterize ASD are noticeable from the earliest stages of childhood development and persist throughout the individual's life. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), ASD is divided into three levels of support, depending on the severity and impairment of factors related to communication, social interaction, and restricted and repetitive behavior patterns. Given the diversity of symptoms and levels of support among people with ASD, individualized interventions are necessary (1-4).

Estimates of the prevalence of autism have been rising considerably. According to the World Health Organization (WHO), there are approximately 70 million people diagnosed with autism worldwide (5). In the United States, the Centers for Disease Control and Prevention (CDC) released a report in March 2023, stating that 1 in 36 children up to the age of 8 has autism, which represents 2.8% of the US population (6, 7). A previous CDC study, released in 2021, showed that the prevalence was 1 in 44 children. In line with the data from the CDC, the incidence of ASD is four times more frequent in male individuals (8, 9).

In Brazil, it is estimated that 6 million people are autistic and, according to the 2023 School Survey, released on February 22, 2024, there are 636,000 students with autism nationwide (10). The growing number of ASD cases is believed to be the result of more effective diagnostic criteria, increased awareness of the subject among parents and society, more qualified training for healthcare professionals, greater financial resources for scientific publications, and the development of specialized ASD services (8, 11).

Regarding the causes of the disorder, studies suggest that ASD has a complex and multifactorial etiology, involving genetic, environmental, and behavioral factors (12). As far as diagnosis is concerned, the criteria outlined in the DSM-5 and the International Classification of Diseases are used (13, 14); diagnostic assessment requires an observational clinical evaluation and detailed anamnesis by a multidisciplinary team. For this purpose, specific scales are used, such as the Modified Checklist for Autism in Toddlers, which allows screening for signs of ASD in children ideally aged from 18 to 24 months (15-17).

Child hospitalization is a critical process that affects the child-family binomial, impacting physical, emotional, and social aspects. During hospitalization, the child is inserted into a new environment and subjected to various invasive procedures that can cause pain, fear, decreased cognitive capacity, and mood swings. In this context, providing care to hospitalized children requires not only conducting the necessary procedures but also developing ludic strategies and

adapting communication so that the child understands the situation and cooperates with healthcare professionals (18).

In terms of the hospitalization of autistic children, the complexity of the disorder requires the nursing team to adapt the care plan to facilitate and ensure a safe, comfortable, and effective hospitalization process (19). In this sense, it is essential that nurses perform individualized interventions focused on the particularities of autistic children, including behavioral, communicative, and sensory adaptations (16).

Law 12.764, of December 27, 2012, established the National Policy for the Protection of the Rights of People with Autism Spectrum Disorder, which establishes that people with ASD are classified as people with disabilities for all legal purposes (20) and must be included in specific legislation for people with disabilities, such as the Statute of People with Disabilities, under Law 13.146, of July 6, 2015 (21).

In addition, Law 12.764 of December 27, 2012, ensures the right to specialized follow-up and comprehensive healthcare, with a focus on providing early diagnosis, multi-professional treatment, and priority access to the services within the Unified Health System (20). Thus, nursing care should be based on the individuality of patients with ASD, promoting an adapted and humanized hospital environment.

Therefore, this study aimed to answer the following guiding question: Within the scope of the research produced, what are the dimensions of nursing care for hospitalized children with ASD? In light of the above, the study aimed to describe nursing care for hospitalized children with ASD.

The relevance of this research stems from the need to produce subsidies for the dissemination of information on ASD and the potential to instruct healthcare professionals on effective nursing interventions in the hospitalization of autistic children to ensure humanized, quality, and resolute care, allowing the child to participate in the entire process.

In general, hospitalization can cause discomfort for children, resulting in physical and emotional suffering, as well as changes to their routine. These challenges can be heightened in children with ASD, due to the characteristics of the disorder. In view of this, studies that address the role of nursing professionals in the hospitalization of children with ASD are essential to understanding the dynamics of the care provided to children and their families, as well as to develop effective interventions and care plans.

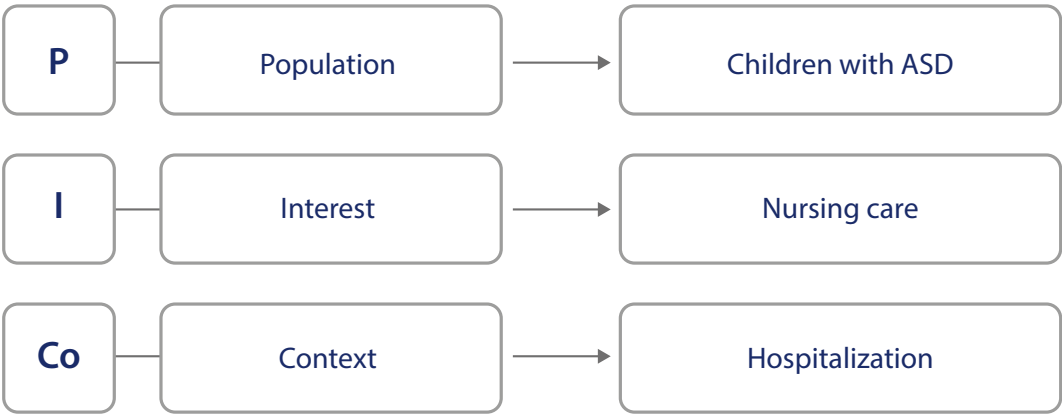
Materials and Methods

An integrative literature review was conducted to ensure a detailed and systematic process in the delimitation of knowledge

(22). Therefore, the search was conducted based on six stages, defined by the aforementioned authors, as follows: definition of the review question; search and selection of primary studies; data extraction from the primary studies; critical evaluation of the primary studies; synthesis of the review result, and presentation of the review.

In the first stage, the research question was drafted—What are the dimensions of nursing care for hospitalized children with ASD?—using the PICo strategy, where ‘P’ stands for population, ‘I’ for interest of study, and ‘Co’ for context. Figure 1 shows how the strategy was organized.

Figure 1. Definition of the PICo Strategy



Source: prepared by the authors.

In the second stage, articles were selected from the databases PubMed, Science Direct, Journals of the Coordination for the Improvement of Higher Education Personnel (*Periódicos da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* [Capes]), Latin American and Caribbean Health Sciences Literature (Lilacs), and Nursing Databases (BDEnf) via the Virtual Health Library (VHL). For the search, the descriptors registered in the controlled vocabulary of the Medical Subject Headings (MeSH) and the Descriptors in Health Sciences (DeCS) were used. The terms were used in Portuguese, English, and Spanish, and then adapted to the language of each database.

Based on the selection of descriptors, specific search strategies were devised for each database, which are presented in Table 1. This data collection was conducted during July 2024.

During this stage, the search strategy was reviewed by specialists in this field to ensure the coverage and adequacy of the terms used. We relied on the collaboration of researchers with experience in the reviewed subject, including the nurse researchers present in the study, who have expertise in providing care for children with ASD, to evaluate whether the descriptors, synonyms, and Boolean operators selected allowed the retrieval of the most relevant studies.

The adjustments performed on the basis of these contributions minimized the risk of inadvertent exclusion of relevant studies and strengthened the methodological validity of the review.

Table 1. Search Strategies

Database	Search strategy
PubMed	((Autism) OR (Autism Spectrum Disorder)) AND (Nursing Care) AND (Child) AND (Inpatient Care)
ScienceDirect	((Autism) OR (Autism Spectrum Disorder)) AND (Nursing Care) AND (Child) AND (Inpatient Care)
Lilacs BDENF	(Transtorno autístico) OR (Transtorno do espectro autista) AND (Criança hospitalizada) OR (Hospitalização) AND (Enfermagem) OR (Equipe de enfermagem) OR (Cuidados de enfermagem)
Capes Journals	Strategy 1: “Criança Hospitalizada” OR “Pediatria” AND “Transtorno Autístico” OR “Transtorno do Espectro Autista (TEA)” AND “Equipe de Enfermagem” Strategy 2: “Transtorno autístico” OR “Transtorno do Espectro Autista” AND “Criança hospitalizada” OR “Hospitalização” OR “Unidades de internação” AND “Enfermagem” OR “Cuidados de enfermagem” OR “Enfermagem pediátrica”

Source: Prepared by the authors.

To improve data collection, in the third stage, the data from primary studies were extracted using the inclusion and exclusion criteria. The inclusion criteria consisted of primary studies published between 2014 and 2024, and the exclusion criteria of theses, dissertations, term papers, books, and book chapters.

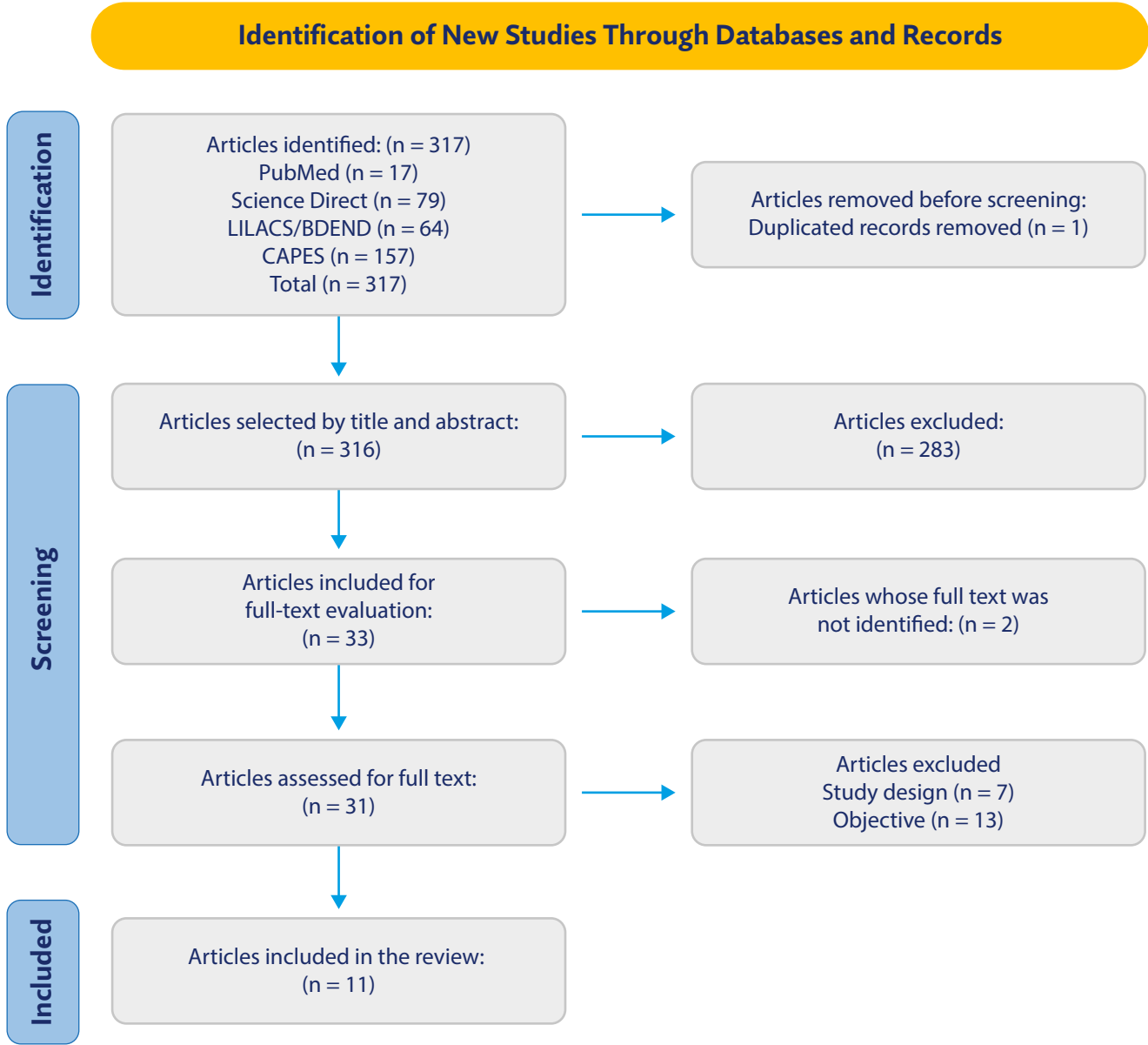
In the fourth stage, after applying the inclusion and exclusion criteria, 317 studies were found, of which one was excluded due to being a duplicate, yielding a total of 316 studies eligible for screening. After reading the titles and abstracts, 283 articles were excluded for not meeting the study criteria, resulting in 33 studies for full reading. Of these, two were excluded due to the unavailability of the full text, and 31 articles were assessed in full. Finally, a total of 11 studies were included in the review. The Prisma diagram was used to accurately represent all the stages of the selection process.

The studies were classified in terms of methodological quality via the Critical Appraisal Skills Programme (Casp) tool, a specific scale for qualitative studies. This tool contains 10 items related to study design and results and is divided into three sections: A, B, and C (23). In addition, the scientific evidence was classified according to the levels and degrees of recommendation proposed by Bork (24).

In the fifth stage, the results of the reviews were synthesized and then, in the sixth stage, the data from the integrative review was drafted and presented.

The search and selection process for the studies included in this review is presented in the figure below, according to the Prisma flowchart (25).

Figure 2. Prisma Flowchart

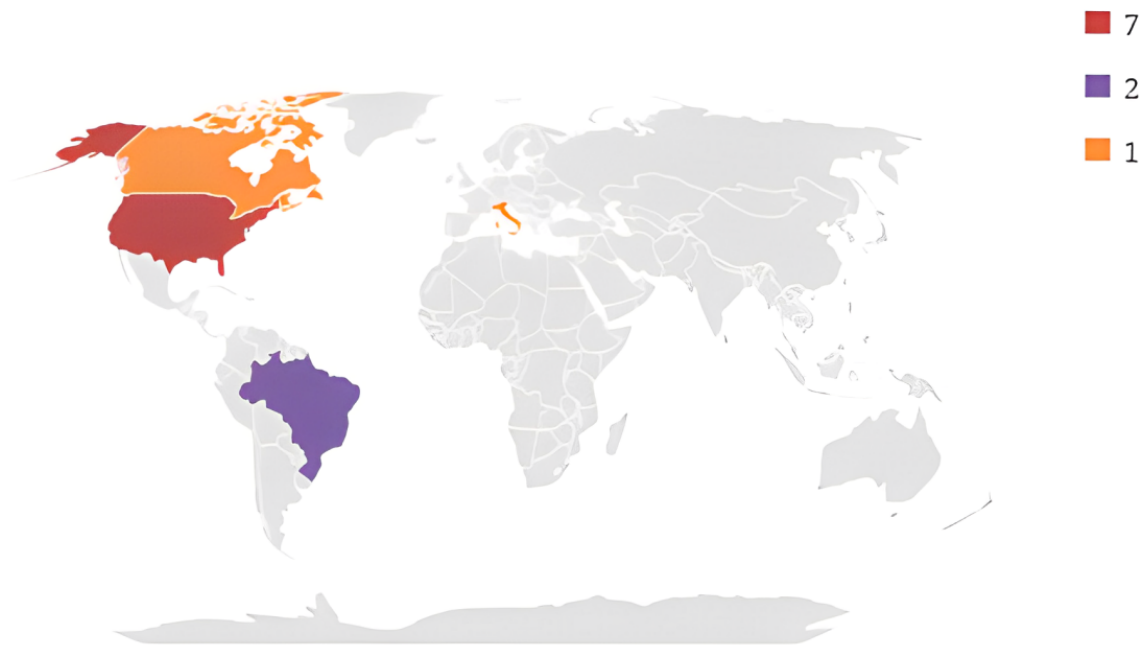


Source: Adapted from Page et al. (2021).

Regarding the countries of origin of the studies, seven were conducted in the United States (26-32), two in Brazil (33, 34), one in Canada (35), and one in Italy (36).

To optimize the results of this review, the data identified after collection was characterized in Table 2, according to publication title, authors, and year, as well as objectives, study method, and main results.

Figure 3. Choropleth Map



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Source: Prepared by the authors.

Table 2. Characterization of the Selected Studies

Title	Authors and Publication Year	Objective	Method	Main Results
Caring for Adults with Autism Spectrum Disorder in the Emergency Department: Lessons Learned from Pediatric Emergency Colleagues	Brasher S, Middour-Oxler B, Chambers R, Calamaro C (26) (2021)	To provide an overview of successful management approaches for children with ASD in the pediatric emergency department setting and to identify ways in which adult emergency departments can adapt these methods to improve care for individuals with ASD.	This is an experience report from a pediatric emergency department.	The main implications for emergency nursing practice include focusing on effective communication, adjusting sensory perceptions and environments, and improving the education of healthcare professionals on how to provide care for children with ASD in the emergency department.
Assessing Ease of Delivering Emergency Care for Patients with Autism Spectrum Disorders	Kouo T, Bharadwaj N, Kouo J, Tackett S, Ryan L (27) (2021)	To develop a method to objectively assess the care of children with ASD in the emergency room.	This is a case-control study with patients aged from two to 18, admitted to the hospital with an ICD-10 diagnosis of ASD or other pervasive developmental disorders (F84) in their medical records between January 1, 2016, and January 1, 2018.	The results suggest that initiatives designed to improve the quality of care for children with ASD should not only focus on the general experience and satisfaction but also on improving the ability to administer care effectively, especially in emergency settings.

Title	Authors and Publication Year	Objective	Method	Main Results
Nursing care for pediatric patients with autism spectrum disorders: A cross sectional survey of perceptions and strategies	Mahoney J, Villacrusis M, Sompolski M, Iwanski B, Charman A, Hammond C et al. (28) (2021)	To describe the nursing team's perspective on providing care for children with ASD in hospital settings, the strategies they use to support care, and the relationship between these factors.	This is a cross-sectional descriptive study aiming to understand the perception of nursing professionals who provide care for children with ASD in hospital settings in the United States.	The study highlighted that having more strategies was the factor associated with greater self-efficacy in providing care for children with ASD. Therefore, the training of the nursing team should focus on increasing the number of strategies to be used with children with ASD in hospital settings and provide mechanisms to collaborate with other professionals to individualize strategies to meet the needs of each child.
Addressing Needs of Hospitalized Patients With Autism: Partnership with Parents	Quiban C (29) (2020)	To explore useful approaches that can help build positive rapport with parents of individuals with ASD.	This is a qualitative methodology, employing interviews and surveys to gather data on parents' perspectives and experiences of providing care for their children with autism. In addition, the researchers collected data by reviewing the existing literature related to support for parents of individuals with ASD.	One of the main results of the study was the identification of strategies that nurses can implement to support parents in managing their daily challenges related to providing care for their children with autism. These strategies aimed to facilitate positive relationships between parents and the healthcare team, leading to better outcomes for individuals with autism.
Paediatric nurses knowledge and experience of autism spectrum disorders: An Italian survey	Corsano P, Cinotti M, Guidotti L (36) (2019)	To research the level of knowledge and experience of Italian pediatric nurses regarding ASD in hospital settings and to improve their ability to provide care for hospitalized children with ASD.	This is an exploratory study employing the questionnaire entitled "Knowledge of childhood autism among healthcare professionals", which included a total of 42 participants.	The results highlighted areas for improving the understanding of ASD and emphasized the emotional challenges that nurses face, as well as the desire to improve their interaction skills through additional training and support.
Sistematização da Assistência de Enfermagem a Criança Autista na Unidade Hospitalar	Cunha G, Paravid S, Nunes R, Batista S, Gomes R (33) (2019)	To correlate nursing diagnoses to support the systematization of nursing care for children with ASD admitted to the pediatric clinic.	This is an exploratory study using a qualitative approach, with a focus on creating a proposal for providing care for children with ASD admitted to a pediatric ward in the hospital network.	The study highlights the need for a structured and individualized approach to nursing care for autistic children in hospital settings to ensure that their unique needs and challenges are adequately addressed.
Percepções e Desafios da Equipe de Enfermagem Frente à Hospitalização de Crianças com Transtornos Autísticos	Oliveira A, de Morais M, Franzoi H (34) (2019)	To analyze the perception and challenges faced by the nursing team related to providing care to hospitalized children with ASD.	This is a descriptive, exploratory study using a qualitative approach, conducted with 19 professionals in the pediatric clinic of a teaching hospital run by the Federal District Health Department.	The main outcome of the research was to shed light on the perception and challenges faced by the nursing team when providing care for children with ASD during hospitalization. The study emphasized the need for more training and support for nursing professionals to improve the care provided to these children.

Title	Authors and Publication Year	Objective	Method	Main Results
Behavioral Coping Plans: One Inter-Professional Team's Approach to Patient-Centered Care	Wittling K, Dufur P, McClain A, Gettis M (30) (2018)	To optimize best practices for the perioperative team in the care of children with ASD through a targeted and individualized care plan for the autistic child and their family.	This is an experience report on the creation of a psychosocial care plan for the behavioral coping of children with ASD.	A total of 89 % of the surgical care team demonstrated an improvement in comfort level, time management, and knowledge of interventions for patients with ASD after the implementation of the coping plan. The nurses engaged in the project reported positive responses to the change in practice, highlighting the effectiveness of coping plans based on individualized needs.
A Pilot Study of Autism-Specific Care Plans During Hospital Admission	Broder-Fingert S, Shui A, Ferrone C, Iannuzzi D, Cheng E, Giaque A et al. (31) (2016)	To create a specific care plan for autism to help improve the hospital experience of patients with ASD and to test the viability and acceptability by comparing the care experience for children with and without a specific care plan.	This is a retrospective, non-randomized review of the medical records of all patients with ASD admitted to the hospital from January 2013 to December 2013 (n = 142) to assess the viability of the intervention.	The study found that autism-specific care plans are viable and promising for improving the care experience of children with ASD and their families in a hospital setting. This suggests that implementing such plans could lead to better outcomes and satisfaction for patients and their caregivers during hospital stays.
Autism comes to the hospital: The experiences of patients with autism spectrum disorder, their parents and health-care providers at two Canadian paediatric hospitals	Muskat B, Burnham Riosa P, Nicholas B, Roberts W, Stoddart KP, Zwaigenbaum L (35) (2015)	To understand the hospitalization experience of children and young people with ASD, their families, and healthcare professionals, with the aim of using the results to improve hospital care for children and young people with ASD.	This is a qualitative study with an interpretative description, focusing on understanding individuals' experiences of health and illness in the healthcare context, with a total of 42 participants.	The results of the qualitative analysis revealed several challenges faced by patients with autism spectrum disorder, their families, and teams of healthcare professionals in hospital settings. These challenges included sensory and communication difficulties, as well as the level of flexibility of healthcare professionals and the hospital organization.
Medication Compliance Protocol for Pediatric Patients with Severe Intellectual and Behavioral Disabilities	Epitropakis C, DiPietro A (32) (2014)	To develop a medication compliance protocol to address medication refusal in pediatric patients with severe intellectual and behavioral disabilities.	This is a qualitative methodology study aiming to research medication compliance protocols for pediatric patients with severe intellectual and behavioral disabilities.	The protocol included the consistent application of strategies to encourage adherence to medication administration, such as the use of positive reinforcers (e.g.: strawberry syrup and music) as rewards. The general success rate of the medication compliance protocols was 83.3 % after four weeks, with some protocols achieving a success rate of 100 %.

Source: Prepared by the authors.

Thus, the studies analyzed highlight nursing care for hospitalized children with ASD requires an individualized and multidisciplinary approach. The main findings of the review were grouped into three main categories: Care strategies, barriers to care, and professional training needs.

Therefore, they emphasize the need for nursing care based on individualization, adapted communication, and continuous training for healthcare professionals. Strategies such as adapting

the environment, using visual communication methods, and partnering with the family have proved effective in improving the hospital experience for children with ASD. However, challenges such as staff overload and lack of specialized training still pose challenges to the implementation of these practices.

After analyzing the methods of each study, the quality of the evidence was analyzed via Casp (Table 3).

Table 3. Evaluation of studies via the Casp tool

Authors and publication year	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Brasher S, Middour-Oxler B, Chambers R, Calamaro C (26) (2021)	Y	Y	NA	NA	NA	NA	NA	NA	Y	Y
Kouo T, Bharadwaj N, Kouo J, Tackett S, Ryan L (27) (2021)	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Mahoney J, Villacrusis M, Sompolski M, Iwanski B, Charman A, Hammond C et al. (28) (2021)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Quiban C. (29) (2020)	Y	Y	NA	NA	NA	NA	NA	NA	Y	Y
Corsano P, Cinotti M, Guidotti L (36) (2019)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cunha G, Paravid S, Nunes R, Batista S, Gomes R (33) (2019)	Y	Y	Y	NA	NA	NA	NA	Y	Y	Y
Oliveira A, de Moraes M, Franzoi H (34) (2019)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wittling K, Dufur P, McClain A, Gettis M (30) (2018)	Y	Y	Y	NA	NA	NA	NA	Y	Y	Y
Broder-Fingert S, Shui A, Ferrone C, Iannuzzi D, Cheng E, Giauque A et al. (31) (2016)	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Muskat B, Burnham Riosa P, Nicholas B, Roberts W, Stoddart KP, Zwaigenbaum L (35) (2015)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Epitropakis C, DiPietro A (32) (2014)	Y	Y	NA	NA	NA	NA	NA	NA	Y	Y
Note: I1 – Were the objectives of the study clearly stated? I2 – Is a qualitative methodology adequate? I3 – Was the study design adequate to meet the objectives? I4 – Was recruitment an adequate strategy for the objectives? I5 – Was the data collected in a way that addressed the study problem? I6 – Was the relationship between the researcher and the participants adequately considered? I7 – Were the ethical issues considered? I8 – Was the data analysis rigorous enough? I9 – Is there a clear statement of the conclusions? I10 – Was the study valuable?							Judgment Y – Yes N – No NA – Not applicable			

Source: Prepared by the authors.

Based on the evaluation of the 10 Casp items, it can be inferred that eight studies, out of the 11 included in this review, have good methodological quality, while three others have moderate methodological quality. The analysis of the results shows that most of the studies were assessed adequately in terms of the clarity of the study objectives and the suitability of the qualitative methodology. However, there were some variations in the quality of the studies in terms of study design, recruitment, data collection, the relationship between the researcher and the participants, ethical considerations, data analysis, and conclusions.

Then, the studies were classified according to the levels and degrees of recommendation (24), with the following levels of evidence: i) Systematic review; ii) Randomized clinical trial; iii) Cohort; iv) Case-control; v) Case series; vi) Specialist opinions; vii) Pre-clinical studies (animals/*in vitro*). In terms of the degree of recommendation, it is classified as: i) The result recommends the intervention; b) The result is inconclusive —not enough to confirm the hypothesis; c) The result contraindicates the intervention (Table 4).

Table 4. Levels of Evidence and Degrees of Recommendation According to Bork (24)

Authors and publication year	Level of evidence	Degree of recommendation
Brasher S, Middour-Oxler B, Chambers R, Calamaro C (26) (2021)	Level V	A
Kouo T, Bharadwaj N, Kouo J, Tackett S, Ryan L (27) (2021)	Level IV	A
Mahoney J, Villacrusis M, Sompolski M, Iwanski B, Charman A, Hammond C et al. (28) (2021)	Level V	A
Quiban C (29) (2020)	Level V	A
Corsano P, Cinotti M, Guidotti L (36) (2019)	Level V	A
Cunha G, Paravid S, Nunes R, Batista S, Gomes R (33) (2019)	Level V	A
Oliveira A, de Moraes M, Franzoi H (34) (2019)	Level V	A
Wittling K, Dufur P, McClain A, Gettis M (30) (2018)	Level V	A
Broder-Fingert S, Shui A, Ferrone C, Iannuzzi D, Cheng E, Giauque A et al. (31) (2016)	Level IV	A
Muskat B, Burnham Riosa P, Nicholas B, Roberts W, Stoddart KP, Zwaigenbaum L (35) (2015)	Level V	A
Epitropakis C, DiPietro A (32) (2014)	Level V	A

Source: Prepared by the authors.

Children with ASD face challenges during hospitalization, including hypersensitivities, sensory difficulties, problems with communication and loud noises, invasive procedures, and multiple interviews. Hospitals can be significant sources of stress due to the uncertainty of the new environment and the difficulty of adapting to changes (29, 30). Furthermore, it is suggested that this reaction is attributed to altered sensory perception, which results in hyper-reactivity to sensory and environmental stimuli (26). Therefore, most children with autism tend to adapt better to environments that are routine, comfortable, and predictable, which highlights the need for adjustments to the environment and sensory perceptions (37).

Furthermore, hypersensitivity to auditory, visual, or sensory stimuli can hinder their acceptance of equipment and procedures, such as cardiac monitors, venipunctures, and blood pressure monitors (31). There are also challenges such as interruptions in care during screening and phlebotomy (27). Deficiencies in these aspects can compromise patient safety, resulting in diagnostic errors due to a lack of accurate vital signs or difficulty in obtaining timely blood tests.

The results of the studies included in this review highlight communication barriers as a significant obstacle in the hospitalization of children with ASD. Similarly, communication difficulties can compromise the expression of pain and other physical symptoms, impairing the provision of care (31, 35). It is therefore essential that the nursing team uses tools to improve communication, such as the Visual Pain Scale.

There is also the importance of dietary care interventions, due to the common food selectivity among these children, who often have hypersensitivities or rituals related to the taste, smell, appearance, and temperature of food (33). This underlines the need for a multidisciplinary approach to ensure adequate nutrition and hydroelectrolytic balance.

Families of children with ASD also face significant challenges during hospitalization. Parental dissatisfaction with how healthcare professionals communicate with their children and the implementation of effective communication strategies has been noted (28). In addition, it has been found that the challenges faced by parents of children with ASD include the significant burden of caring for: managing the behaviors associated with autism, high financial burdens, and physical and mental problems such as muscle tension, gastrointestinal symptoms, anger, and depression (29).

The hospitalization of children with ASD often results in the severance of family bonds, since the main caregiver usually remains in the hospital for prolonged periods (33). This situation can generate a significant emotional burden and stress, affecting both the family dynamic and the support the child receives. The lack of constant

contact with other family members can aggravate the suffering of the child and the parents, damaging the well-being of all involved.

In terms of the challenges faced by nursing professionals, studies have emphasized the nursing team's insufficient knowledge regarding ASD and limited communication strategies (27, 28, 34). Similarly, in terms of the professionals' knowledge of the subject, difficulties have been identified regarding the etiology, signs, and symptoms, as well as therapeutic interventions for children with ASD, since the subject is not covered comprehensively during academic training (34). This can lead to feelings of helplessness and compromised care for children and their families who require specialized care. It also reflects the urgent need to improve training and support for these professionals.

Additionally, the scaling of nursing personnel has been highlighted as a significant problem (34). Several hospital nursing teams operate with a reduced number of professionals, which negatively affects the implementation of personalized interventions and the quality of care, due to time constraints and work overload.

In addition, self-efficacy among nurses is affected by feelings of inadequacy and emotional challenges, such as sadness, inadequacy, and embarrassment, which highlights the importance of an educational approach that includes not only technical knowledge, but also emotional support (36). A holistic approach to be implemented includes forming a network of healthcare professionals who collaborate and share their knowledge and functions, with the aim of promoting children's well-being and ensuring comprehensive care.

Qualitative studies have highlighted the importance of a collaborative approach between healthcare professionals and families when providing care for children with ASD (29, 35). Furthermore, they emphasize that including the family as active members in the planning and execution of care is essential for personalizing care and addressing specific challenges, such as communication and managing agitation (29).

Likewise, nursing professionals should consider parents' preferences before performing any invasive procedure on their child and determine the best approach to communicate to the child, such as using images, as well as understanding the specific needs of each patient (29). The study also highlights the importance of using the hospitalization period to promote health education for family members, since hospitalization has an impact on family dynamics as a whole. In this context, it is crucial to guide family members and caregivers on techniques to reduce stress and anxiety, manage emotions, maintain health and self-care, inform them of chaplaincy services in the hospital unit, if available, and emphasize the importance of sleep for physiological health (38, 39).

Effective partnerships with parents, especially in communicating special needs and interpreting signs in non-verbal children, are crucial to providing positive care experiences (35). Parents performed an essential role in helping with diagnostic hypotheses, identifying the child's specific needs and sensitivities, and providing relevant information, especially in the case of non-verbal children. This collaboration is vital for promoting positive experiences in both child and family healthcare, given that the study showed that positive experiences are associated with reduced stress and anxiety in caregivers.

Similarly, studies point to the need for specialized training to facilitate interaction between nursing professionals and family members of children with ASD (28, 30). The approaches adopted should include effective communication techniques, family stress management strategies, and methods designed to create a welcoming environment; thus, studies have consistently shown that collaborating with families, understanding the child's needs through caregivers, and recognizing parents as experts in their child's needs are key aspects of establishing an effective patient-professional relationship when providing care for children with ASD (28, 40).

From this perspective, the implementation of specific care plans has been shown to be effective in improving the hospital experience of children with ASD and their families (31). As a study result, parents whose children had specific care plans were more likely to report that professionals explained information more clearly, listened to their concerns thoroughly, and helped the child cope with the fear and stress related to hospitalization. In terms of care, professionals asked if there was any part of the physical examination that the child did not tolerate well, how the child expressed their needs and desires, if there was any intolerable sensory stimulation, and if there were any behaviors that required additional support from the team.

The results of the studies included in this review highlighted the importance of the strategies adapted to improve the care of children with ASD in hospital environments. Thus, the need for soft technologies was noted, such as effective communication, adaptation of sensory environments, and continuous education for healthcare professionals, pointing to practices such as the use of hospital passports and sensory kits to improve patients' experience and stress management (26).

A hospital passport is a document that summarizes essential information regarding optimal communication, pain management, sensory needs, specific interests, and possible triggers for the patient. The main aim of this resource is to ensure that healthcare professionals are aware of the patient's individual needs and to facilitate the provision of care during hospitalization. Sensory kits, on the other hand, are described in the study as tools that help in performing procedures with children with ASD, reducing resistance to cooperation and minimizing feelings of anxiety and stress (26).

These kits often include items such as noise canceling headphones, stimulation toys, anti-stress balls, and tablets. In addition, it is recommended to adjust the hospital environment, such as using private rooms and reducing the intensity of lights and noises to reduce excessive stimuli that could complicate the hospitalization process (26).

Continuous staff training and the use of behavioral reinforcement techniques to improve the quality of care and reduce challenging behaviors were highlighted (27). Similarly, the effectiveness of positive reinforcement has been mentioned as a key strategy for managing problematic behavior, thereby promoting a more positive hospital experience for children with ASD (36).

The technique of behavioral reinforcement, often referred to as “positive reinforcement”, is a strategy widely used in applied behavior analysis therapy (41). This method consists of offering the child meaningful rewards, such as praise, toys, books, or access to favorite activities, such as playgrounds, after they have exhibited desired behaviors. This approach has been shown to be effective in promoting adaptive behaviors and reducing challenging behaviors, making a significant contribution to managing the hospitalization period of children with ASD (42).

Furthermore, the benefits of individualized psychosocial care plans include signaling and limiting the professionals involved in care, as well as the possibility of using comfort items preferred by the child throughout the hospitalization process (31). The interventions proposed in the study not only improved comfort and time management, but also reduced the need for sedation, as evidenced by the reduction in sedation required for laboratory tests. These findings highlighted the importance of a personalized and integrated approach, which considers both the psychosocial well-being and the specific sensory needs of children with ASD.

Furthermore, it has been noted that it is important to use soft technologies in the healthcare of children with ASD during hospitalization (34, 39, 43). Music therapy, for instance, promotes socialization, improves physical and mental functions, facilitates the establishment of a bond between professional and patient, and helps to reduce the stress associated with the hospital environment (44). Another tool recommended for nursing professionals is therapeutic toys (45). The use of ludic toys offers children a way of expressing themselves, relieves tension and negative emotions, and improves communication and relationships between children, families, and healthcare professionals, which is essential for providing humanized and effective care (46, 47).

Studies have addressed the need for continuous training, communication strategies with the family, modifications to the environment, and interprofessional collaboration in the care of children with ASD, underlining that the effectiveness of care hinges on the

repertoire of strategies available (28). To interact with a child with ASD, the use of gestures and short instructions, the incorporation of images or visual aids, and waiting an adequate period before providing new instructions were recommended (48, 49).

Similarly, the importance of interprofessional support has been highlighted (28). A valuable strategy for the nursing team is to request appointments with the child's therapeutic team, which can contribute to the development of an effective therapeutic plan, tailored to the child's specific needs. In addition, the importance of interaction between professionals and matrix support was emphasized, pinpointing the Child and Youth Psychosocial Care Center (*Centro de Atención Psicossocial Infanto-Juvenil - CAPSij*) as a significant reference in the care of children with ASD (28, 34).

Qualitative studies have highlighted the relevance of individualized approaches and specific protocols in the care of children with ASD in hospital settings (31-33). Similarly, they have shown the effectiveness of medication compliance protocols, using positive reinforcers to improve adherence to treatment, with significant success rates (32). Collaboration with psychologists to customize reinforcers emphasizes the need for an interdisciplinary approach.

It has been noted that the implementation of a personalized care plan has a key role in providing care for children with ASD, by increasing professionals' knowledge of the disorder, improving their self-perception of their skills, and promoting more effective interactions between the patient, the family, and the healthcare team (31). The study showed that nurses were the professionals who used individualized care plans most often.

These studies have presented a specific care plan for children with ASD during hospitalization and have addressed the implementation of various nursing interventions (33). These interventions include minimizing unnecessary physical contact; using non-verbal communication during appointments, with the use of objects, toys, gestures, and images, such as visual pain scales; ensuring continuity of the caregiver or professional responsible for the child's care; establishing a connection with the child to promote a safe environment that encourages interaction; reducing the number of simultaneous procedures performed; providing comfort to the child, such as bringing familiar items into the hospital environment; avoiding the use of force or threats to perform procedures; and ensuring that the environment is adapted to the child's sensory needs. These strategies aimed to improve the nursing team's practice and promote more humanized, welcoming, and effective care (33, 50).

Furthermore, feeding children with ASD during hospitalization has been emphasized (33). Given these children's tendency towards food selectivity and the possibility of refusing food in the hospital, which can lead to inadequate nutrition and a water-electrolyte imbalance, it is essential that the nursing team implement the follow-

ing interventions: monitor food intake and identify the reasons for any refusals; record specific information regarding food in the patient's medical record, such as allergies, color, texture, and size of food; collaborate with the medical doctor and nutritionist to define the most adequate diet; and perform water balance checks on the patient (33).

Thus, the studies point to the importance of continued training for healthcare professionals, which not only increases their knowledge of AS, but also improves their self-efficacy and the quality of their interactions with patients and their families. The use of specific care plans is vital to meet the unique needs of each child and promote more humanized and effective hospital care.

One of the limitations of this review is the prevalence of qualitative studies, which, while enriching the understanding of the phenomenon, limits the generalizability of the findings. In addition, the scarcity of studies conducted in Brazil restricts the direct applicability of the results to the national context.

In light of this, it is recommended that experimental and longitudinal studies be conducted to evaluate the effectiveness of specific interventions in the hospitalization of children with ASD. Research aimed at creating and validating standardized protocols can contribute to the systematization of care, reducing variability in the care provided. Furthermore, research on the impact of training the nursing team on the quality of care can provide support for the development of more effective continued training programs.

Thus, this study emphasizes the need for evidence-based strategies to improve nursing care for hospitalized children with ASD, highlighting the importance of a care model that covers the child's individual needs, family support, and professional training.

Conclusions

The present study achieved its objectives by describing the dimensions of nursing care for hospitalized children with ASD, identifying inherent challenges, and proposing evidence-based interventions. The analysis of the studies reviewed shows that hospitalization of this population requires an individualized approach, which includes the adaptation of the hospital environment, the implementation of alternative communication strategies, and the development of personalized care plans. In addition, the partnership with the family and the continuous training of nursing professionals were identified as key elements for quality care.

The findings reinforce the need to invest in the training of nursing staff and expand knowledge on ASD, behavioral management,

and alternative communication. They also highlight the importance of interdisciplinary collaboration and the creation of specific institutional guidelines for the hospitalization of children with ASD, thus ensuring humane and effective care.

For future research, it is suggested that experimental studies should be conducted to evaluate the effectiveness of varying care strategies in the hospital setting, as well as research into the impact of professional training on the quality of care. In addition, it would be relevant to explore the development of standardized protocols for the care of children with ASD, integrating evidence-based practices that have been adapted to institutional realities.

Therefore, the present study contributes significantly to the growth of knowledge in the field of pediatric nursing, providing theoretical and practical support to improve hospital care for children with ASD and their families.

Conflict of interest: None declared.

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