Spring 4-2-2024

STRATEGIES OVER KNOWLEDGE: TRAINING GAPS PRESENT IN CARING FOR PATIENTS WITH AUTISM SPECTRUM DISORDER FOR PEDIATRIC AND STUDENT NURSES

Jasmine E. Johnson

STRATEGIES OVER KNOWLEDGE: TRAINING GAPS PRESENT IN CARING FOR PATIENTS WITH AUTISM SPECTRUM DISORDER FOR PEDIATRIC AND STUDENT NURSES

by

Jasmine Johnson

A Thesis Submitted in Partial Fulfillment
Of the Requirements for the
University Honors Program

Department of Nursing
The University of South Dakota
May 2024

The members of the Honors Thesis Committee appointed

to examine the thesis of Jasmine Johnson

find it satisfactory and recommend that it be accepted.

_____

Jessica Warren, EDD, MSN, RN
Lecturer of Nursing
Director of the Committee

_____

Danielle Fleming, MSN, RN, CEN, SCRN
Clinical Lab Instructor

_____

Jean Yockey, PhD, MSN, RN, CNE
Associate Professor of Nursing

Positionality Statement and Acknowledgements

Prior to presenting my findings, it is essential to identify any biases that may have impacted the research process. Firstly, I am an older sibling of a sister who has been diagnosed with Autism Spectrum Disorder, and I have firsthand seen maltreatment from healthcare providers within the clinical setting. While this pushed me to research more about training among nurses with regards to ASD, the information presented from the research is factual and appropriate for the context.

Next, I would like to thank my thesis faculty for their immense support and assistance throughout this process. Their insight and expertise have been invaluable, and I would not have been able to present without their contributions. I also would like to thank the immense patience and support my family has given during my collegiate career. You have given me the confidence and ability to do this, and I hope to make you as proud as you have me.

Lastly, I would like to dedicate this thesis to my younger sister, Elaina. You have displayed to me in so many ways that the titles many use to define you have little impact on your energy and power. From the first time I helped you swing in a sensory chair to the first time you let me give you an insulin shot, you have shown me why I want to be a pediatric nurse and what it means to truly be resilient. I am truly grateful to be able to call myself your older sister.

TABLE OF CONTENTS

Abstract

With Autism Spectrum Disorder (ASD) prevalence ever increasing among the pediatric population, nurses can expect to see an increase in the number of autistic patients within their clinical practice settings. Previous researchers have shown that pediatric nurses are required to overcome many barriers when working with autistic patients, and adequate training is necessary to achieve genuine patient-centered care. However, parents have reported less than optimal care received by their children with ASD within the healthcare system. Therefore, research is needed to determine where training could be improved for this patient population. This study aimed to identify where training deficits are within undergraduate and pediatric nurse training, along with successful applications in training for the care required for ASD patients. A rapid review of databases found that while nurses may display a strong knowledge of ASD, this does not directly correlate with confidence in their care for autistic patients. This confidence lack can be due to insufficient pediatric education and exposure during undergraduate studies, with similar confidence issues being found among nursing faculty specializing in pediatrics. Also, even nurses reporting high knowledge of ASD report not having enough strategies when working with ASD patients. Current successful training applications in both pediatric clinical areas and nursing undergraduate programs show that educating on the use of evidence-supported strategies greatly increases the ability of nurses to work with pediatric patients with ASD. Simulations and in-hospital programs, then, may be the answer to solidifying nurses' skills in working with ASD patients.

Introduction

Autism Spectrum Disorder (ASD) prevalence within the pediatric population in the United States has continued to increase over the past decades. With the rising number of autism diagnoses, a corresponding increase can be expected in the number of autistic pediatric patients being treated for comorbid conditions. Due to the increase in ASD prevalence, it is evident that pediatric-specialized nurses must be prepared and equipped to work with this population. This study analyzes the prevalence of pediatric patients presenting to healthcare environments and current gaps regarding ASD education and nursing training. This can assist in determining the most beneficial strategies that will better equip nurses to care for pediatric patients with autism, improving parent satisfaction and patient health outcomes within this population.

Background

Autism Spectrum Disorder Overview

Autism Spectrum Disorder (ASD) can best be described as a "developmental disability caused by differences in the brain. People with ASD often have problems with social communication and interaction, and restricted or repetitive behaviors or interests" (National Center on Birth Defects and Developmental Disabilities, 2022). This disorder continues to be increasingly common among children within the United States, with the reasoning being multifaceted and complex. In an article from Rice et al. (2012), explanations for this increase include more robust analytical tools, more accurate screening and identification strategies, changes in the ASD diagnostic criteria, increased awareness about ASD among both parents and healthcare providers, and changes in the availability of services. The CDC, through the Autism and Developmental Disabilities Monitoring (ADDM) group, found that "the overall

ASD prevalence was 27.6 per 1,000 (one in 36) children aged 8 years and was 3.8 times as prevalent among boys as among girls (43.0 versus 11.4)" (Maenner et al., 2023, p. 1). This data shows a sharp increase in the number of children being diagnosed with Autism, as earlier surveillance reports from the same group found a prevalence rate of 1 in 69 children in 2012 (ADDM Network, 2024). Due to such an increase, there is a strong need for better infrastructure that supports readily available diagnostic, treatment, and supportive services to any child diagnosed with ASD (Maenner et al., 2023).

With an increased rate of children being diagnosed with ASD, providers can also expect this increase within the pediatric population of the hospital. Multiple comorbidities found in those with ASD that would increase the frequency of clinical and hospital visits include attention-deficit/hyperactivity disorder (ADHD), anxiety, depressive disorders, sleep disorders, sight/hearing impairment/loss, and gastrointestinal syndromes (Bougeard et al., 2021). Although the data behind these comorbidities is heterogenic in nature, it supports that many children with ASD within the healthcare system often also present with other health-related issues.

The Nurse's Role

Beyond the expected role that pediatric nurses have within the healthcare setting, patients with ASD require specific strategies and skills in order to best succeed. Examples of these skills include reaching out and listening to both the patient and their family members to add key information to care plans (e.g. best ways to communicate, sensory stimulation to avoid). Other critical factors in ensuring better outcomes and quality of life for pediatric ASD patients include "early diagnosis and treatment, consistent nonpharmacologic approaches, use of medication when indicated, regular use of therapies, and ongoing counseling result in the

best outcomes and quality of life" (Owen et al., 2020, p. 35). Nurses caring for ASD patients must not only consistently communicate with parents but also implement routine therapies, counseling measures, and regular nonpharmacologic approaches to their work in order to provide effective and individualized care. Patients with ASD may easily overwhelm nurses who are not adequately educated or prepared to work with an autistic patient (McIntosh et al., 2018).

Regarding the pediatric nurses responsible for caring for those with ASD, many barriers can be identified not only with providing basic care for an autistic child but also with ensuring the patient is safe and satisfied while at the hospital. Various elements of a hospital setting, including the unfamiliarity, "hustle and bustle", loud noises, and meeting multiple unfamiliar providers can all cause significant stress for a child with ASD. Previous negative visits and experiences can further impact the behavior of a child with ASD at future visits. In addition, the hypersensitivity that those with ASD can feel makes it increasingly difficult for nurses to complete assessments and examinations as needed (Khanlou et al., 2022). Therefore, considering all the challenges provided, pediatric nurses must be adequately trained and prepared prior to and while working with children with autism.

Parent Testimonies

Many parents of children with ASD are less than satisfied with the care their child has received within the United States healthcare system. Some significant challenges these families describe facing include feeling devalued by service providers, delayed diagnosis, inadequate services provided, and poor communication between both parents and between service providers (Samsell et al., 2022). Inadequate knowledge regarding ASD among healthcare providers can further impact parents by requiring more energy and money spent to

ensure the child's healthcare needs are met (Samsell et al., 2022). Parents have further expressed these feelings of helplessness, stating that their feelings stem from an overall frustration with the healthcare system, lack of understanding of what autism is, and healthcare providers being unaware of what all is involved when managing the healthcare needs of a pediatric patient with ASD (Strunk et al., 2014). A further concern that these parents have expressed includes conducting challenging medical procedures such as receiving an injection, getting blood drawn, or dental care. Parents described struggling with managing the child during the scenarios, and concerns regarding the ongoing use of anesthetics in order to complete these procedures (Strunk et al., 2014).

Summary Statement

This paper presents findings from a review of peer-reviewed, published literature on the availability and effectiveness of Autism Spectrum Disorder training available for nurses, specifically those working in pediatric fields.

Definition of Terms:

Autism Spectrum Disorder - "Any of a group of developmental disorders (such as autism and Asperger's syndrome) marked by impairments in the ability to communicate and interact socially and by the presence of repetitive behaviors or restricted interests" (Merriam-Webster, 2024 Autism Spectrum Disorder, Definition 1).

Comorbid - "Existing simultaneously with and usually independently of another medical condition" (Merriam-Webster, 2024 Comorbid, Definition 1).

Intervention - "The act or fact or a means of interfering with the outcome or course, especially of a condition or process (as to prevent harm or improve functioning)" (Merriam-Webster, 2024 Intervention, Definition 1).

Methods

Objectives

This review aimed to assess for gaps and evaluate the effectiveness of ASD training for nurses, along with providing recommendations on said training. The main objectives include:

- Establish what training is available for both nursing students and current pediatric nurses regarding treating patients with ASD;
- Identify any gaps in nursing care of pediatric ASD patients due to inadequate training;
- Recommend training changes based on evidence that identifies stronger nursing interventions and better patient outcomes.

Search Methods

Published, peer-reviewed literature from January 2010 to January 2023 was reviewed to identify available training and any gaps present for nurses working with pediatric ASD patients. The evidence was also reviewed for any strategies or studies presenting new training systems with positive outcomes to identify the best recommendations.

Literature Search Strategy

Two electronic databases, PubMed and EBSCO, were used to retrieve the relevant literature. A PRISMA model was developed and implemented to best guide the selection process, where the author then assessed the articles for relevancy, extracted the data presented, and then entered this extracted data into Table 1. A librarian assisted with identifying search terms, identifying relevant evidence, and navigating the databases.

Data Items

In order to classify the articles analyzed within Table 1, column 2 displays the appropriate level based on the applied John-Hopkins Nursing EBP of classification. Level I includes high-quality randomized controlled trials (RCTs) and systematic reviews of RCTs. Level II includes systematic reviews of a combination of RCTs and quasi-experimental studies or solely reviews quasi-experimental studies. Level III includes various studies, such as systematic reviews of a combination of RCTs, quasi-experimental and non-experimental, and systematic reviews of non-experimental studies only. Qualitative studies or systematic reviews are included within this level. Level IV covers the opinions of respected authorities and recognized expert committees. The last level, Level V, includes case reports and literature reviews.

Search

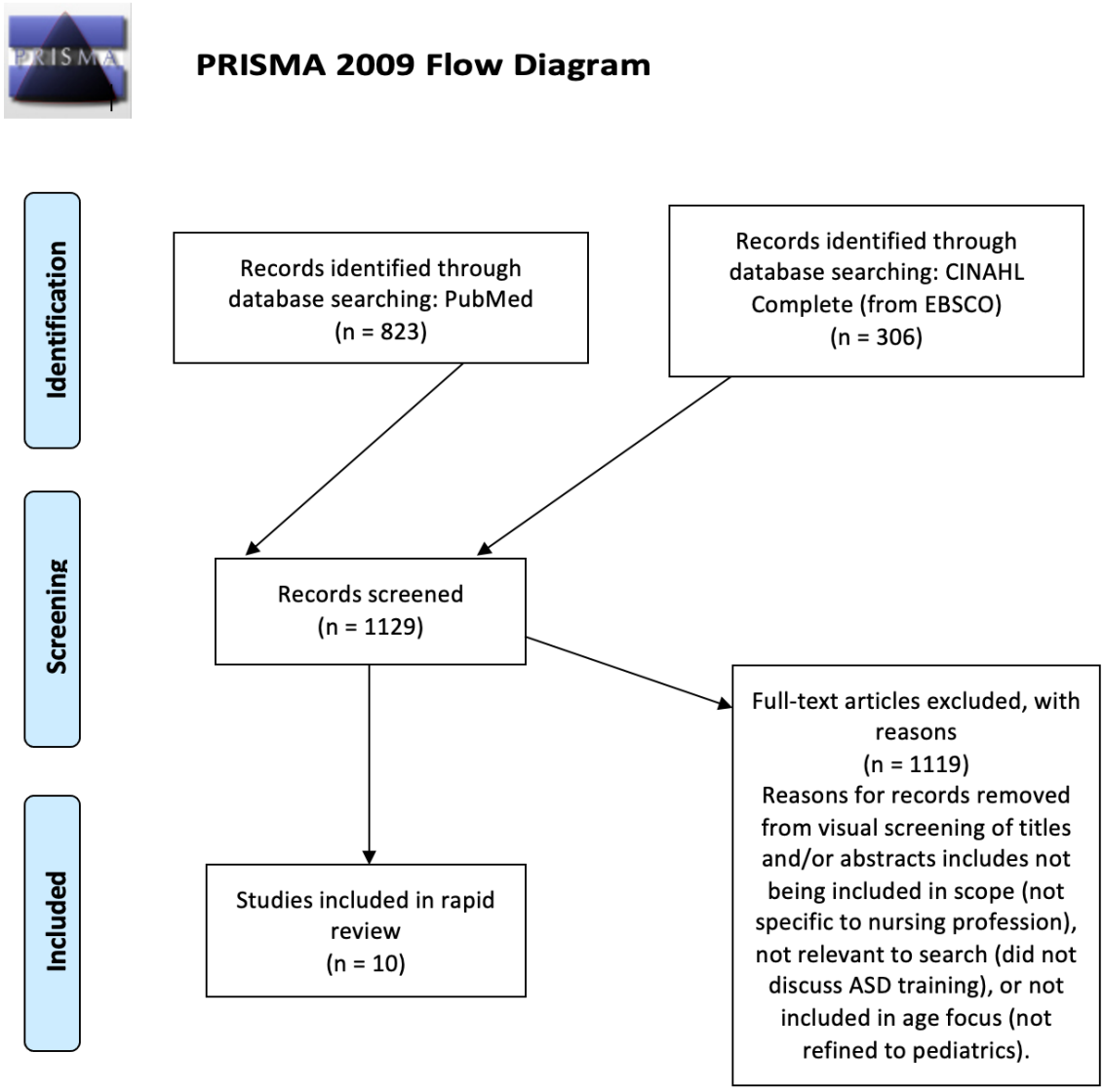
- *PubMed:*
    - (("autism"[All Fields] OR "autism spectrum disorder"[All Fields] OR "asd"[All Fields]) AND ("nurse"[All Fields] OR "nurses"[All Fields] OR "nursing"[All Fields]) AND ("training"[All Fields] OR "education"[All Fields] OR "development"[All Fields] OR "learning"[All Fields]))=903 results
    - Published Last 10 years; English=823 results
    - Screening of Titles and Abstracts for Relevance= 5 results
- *CINAHL Complete (via EBSCOhost):*
    - Searched 2010 through 2024

    - Line 1: “Autism or ASD or Autism Spectrum Disorder”; Line 2: “nurse or nurses or nursing”; Line 3: “training or education or development or learning”=306 results
    - Inclusion/Exclusion Criteria: English, Published Within Past 14 Years, Peer-Reviewed
    - Screening of Titles and Abstracts for Relevance= 5 results
- Combined Results (Duplicates Removed (1)) = 10 results

Results

Study Selection

Diagram 1



Summary of Reviewed Literature

Results were grouped into three themes which contributed to the discussion of the state of ASD training available for pediatric nurses: lack of nurse's comfort and readiness to work with autistic pediatric patients, insufficient education and readiness of faculty to teach, and current successful teaching applications.

Nurse's Comfort and Readiness to Work with ASD Population

Nursing staff were shown to have recalled little exposure to teaching regarding intellectual disabilities, including ASD. Along with this, nurses also stated that they had little to no effective clinical experience with individuals with developmental disabilities within their undergraduate nursing education, with ASD being no exception (Gardner, 2012; Díaz-Agea et al., 2022). Nurses also recognize having little knowledge of how to care for an ASD patient, including having low competency on the behavioral patterns these patients often exhibit. With this data, it can be understood why previous studies show nurses do not feel prepared to provide ASD patients' care in clinical environments (Díaz-Agea et al., 2022). Due to this, along with the knowledge that ASD patients can be seen as difficult to care for due to their unique needs, specialized strategies are needed for nurses in order to provide even the most "basic health care services" to this population of patients (Gardner, 2012, p. 521). Within one survey provided to pediatric nurses, the connection of knowledge and effectiveness, along with confidence, was measured regarding caring for an autistic patient. Many nurses report that they need additional support in order to care for pediatric ASD patients, with only 35% of the recorded sample stating that they know adequate strategies to care for this population (Mahoney et al., 2021). However, this does not correlate significantly with each provider's knowledge regarding ASD overall. Based on the measurement between

knowledge and effectiveness, there was no significant relationship, contradicting past research showing that knowledge led to better treatment of children with ASD (Mahoney et al., 2021). Because of these findings, education must provide nursing students not only with a basic understanding of ASD but also training that focuses on strategies for caring for autistic patients. This training can also be applied to existing nursing staff, with education focused on building on existing strengths within pediatric nursing staff (Mahoney et al., 2021).

Lack of Training Available & Faculty Scarcity (Educational Challenges)

Since many nurses are not confident in their knowledge of ASD and subsequent nursing care strategies, it is understandable that many of the collected studies identified inadequate training for both nursing faculty and students as a central component of this issue. Recruiting pediatric faculty continues to be difficult, with many faculty members acknowledging the need for both experienced pediatric faculty and quality pediatric clinical sites (McCarthy & Wyatt, 2014). Further surveys support this, with 49% of a 334 nursing program sample size reporting recruiting pediatric faculty as extremely to moderately difficult. The recruiting difficulty may have to do with the recent decrease in the number of Master of Science of Nursing programs available within the pediatric specialty (McCarthy & Wyatt, 2014). Competition for pediatric clinical sites was another reported barrier for 67% of the sample (McCarthy & Wyatt, 2014). Problems also exist with the confidence and expertise faculty have in regard to ASD patients. Within the article by Gardner et al. (2016), 79% of the surveyed faculty rated caring for an autistic patient as difficult to very difficult. More than half of this sample also reported feeling uncomfortable to slightly uncomfortable in providing care to these patients. Further, faculty may feel uncomfortable teaching about ASD and find challenges in incorporating effective exercises to get nursing students ready to work with

patients with ASD. The same article suggests that “creative, integrative teaching strategies that provide opportunities for students to learn and apply best practices for nursing care of people with ASD without over-burdening a curriculum,” such as case studies and simulation experiences, can help these soon-to-be nurses best prepare to care for this population (Gardner et al., 2016, p. 216).

Beyond issues regarding adequate faculty available to teach nursing students about ASD patients, various identified articles emphasized the lack of ASD education being provided in nursing programs. A survey of 334 schools found that more than 47% of the sample reported having 2 hours or less of pediatric content in behavioral/mental health, family health/parenting, and community or school health (McCarthy & Wyatt, 2014). This lack of time spent on pediatric behavioral health can also be translated to a lack of confidence in clinical practice. Although conducted in Australia, a survey found similar findings when analyzing the preparedness of pediatric nurses to work with autistic patients. Of the pediatric nurses surveyed, 50% reported feeling not at all prepared from prior education to work with patients with intellectual disabilities, including ASD (Cashin et al., 2021). Therefore, not only can gaps be found in faculty and program education regarding ASD, but also within pediatric nurses’ confidence and ability to care for pediatric autistic patients

These low confidence levels may have a direct correlation to the care that pediatric ASD patients receive. During a simulation within an undergraduate nursing program, aimed at simulating what caring for a pediatric autistic patient may involve, weaknesses of 4th year nursing students could be identified (Díaz-Agea et al., 2022). The main weaknesses included poor management of the child’s emotions, lack of ASD knowledge, clinical errors, poor communication, and behavior toward the caregiver (Díaz-Agea et al., 2022). Areas where

improvement could be most beneficial include addressing excessive verbal communication, abundant stimulation, low demand of information from the caregiver regarding the patient, scarce information requested about the patient's emotions/interests, and overall lack of knowledge about the profile of children with ASD (Díaz-Agea et al., 2022). The authors further discuss possible reasoning as to why the students demonstrated poor ASD patient care, identifying the overall often limited exposure to ASD information in both formative and clinical environments during undergraduate nursing studies. In addition, the researchers discussed how a change in focus from "traditional teaching methodology to one that is experimental and reflective, such as simulation, [may provide] an answer to this need" (Díaz-Agea et al., 2022, p. 5). Therefore, in order to truly teach nurses about ASD care and the strategies needed, unconventional teaching methods such as the presented simulation may need to be incorporated into curriculums to better prepare students to achieve optimal nursing care for ASD patients.

Current Successful Applications

As previously discussed, creative approaches to teaching both nursing students and current nurses about ASD may be more beneficial than traditional classroom education. One study delved into this idea, exploring the impact and knowledge gained from presenting nursing students with a simulated ASD patient. Prior to the simulation, students were taught about ASD through various means (lectures, case studies, description of simulation). However, the exam questions covering ASD assigned prior to completing the simulation were not perceived as effective in preparing for ASD patient care by the participating students (McIntosh et al., 2018). However, 63% of the students strongly agreed or agreed that they implemented the strategies learned during classroom instruction to defuse meltdowns

presented by the simulated patient (McIntosh et al., 2018). After the simulation, almost all students stated that the simulation provided an opportunity to use critical thinking, provided unique problems, and agreed that the simulation required the students to anticipate how to deal with challenging patient behaviors (McIntosh et al., 2018).

Aside from pre-graduation education, evidence supports the positive impact of adequate programs for current pediatric nurses caring for autistic patients. Within an extensive Midwestern pediatric hospital system, The Adaptive Care Program was developed. This included a team of interdisciplinary members who collaborated when caring for an autistic patient, with training provided for each member (Mahoney et al., 2023). After the program's implementation, the most considerable impact was found to be within the participating nursing staff. Strategies provided by the program, including a tip sheet and a caregiver questionnaire, showed significant increases in usage from pre- to post-test. This may be partially due to the substantial revision that the questionnaire underwent based on input from the nursing staff (Mahoney et al., 2023). However, the nursing staff's knowledge remained the same after participating in the program, as it was relatively high before the intervention. This finding supports the previous discussion that high ASD knowledge does not necessarily mean high confidence or comfort in caring for autistic children within the healthcare setting (Mahoney et al., 2023). Overall, these applications provide support for the idea that education must include and focus on strategies and tools to care for autistic pediatric patients, rather than solely on ASD knowledge.

Discussion

Summary of Evidence

Three overall themes were identified within the review: lack of nurse readiness to work with autistic pediatric patients, insufficient faculty availability and faculty confidence in teaching about pediatric ASD, and current successful applications of nurse training on ASD. While most studies supported that pediatric nurses were knowledgeable on the characteristics of ASD, the connection between knowledge and application of strategies was not present. This finding may be due to the lack of appropriate faculty and training available regarding ASD, specifically with strategies to work with pediatric ASD patients. One recurring recommendation stated by Gardner et al. (2016) discusses how integrative strategies to teach about the care of pediatric ASD patients could best reinforce these weak areas without overburdening the already heavy nursing curriculum. Two articles implemented this integration, analyzing the use of an undergraduate nursing simulation and an in-hospital ASD care program, respectively. These programs relied on strategies and tools, rather than solely ASD knowledge, to train their students or nursing employees and emphasize the importance of reinforcing strategies to care for ASD patients to ensure proper patient care.

Given the recent increase in pediatric ASD prevalence and the information from the presented articles, the future of ASD training for nurses must be evolved and focused in order to bridge the current ASD knowledge gap. While pediatric nurses have reported and shown their understanding of the characteristics of ASD, this has shown to not be enough in preparing a nurse to work with an ASD patient. Increasing training on the implementation of strategies has shown to increase actual strategy use and increase nurses' confidence in working with the pediatric ASD population, supporting the idea that training must include

specific strategies rather than solely disorder knowledge when caring for the pediatric ASD population. Also, given the prevalence of comorbidities among autistic children (Bougeard et al., 2021), pediatric nurses can expect more ASD patients than before, meaning that proper training and strategies must be in place in order to ensure all patients are getting tailored care that best suits their needs. Integrating holistic training in nursing schools and/or pediatric hospitals can improve the confidence of nurses and improve the experience of ASD patients and families during their time in the healthcare setting.

Limitations

Multiple potential limitations are present within the research provided. Although studies analyzed the impact of strategy-based training on nursing confidence, it does not analyze the impact of this training on parent satisfaction. While it is important that nurses feel confident in their abilities to care for the ASD patient, further conclusions on patient impact cannot be drawn without further research. Future studies can evaluate the long-term impact of ASD strategy training for pediatric nurses on parent satisfaction and their overall care provided. Since pediatric ASD patients pose risks as a vulnerable population, due to their age and intellectual disability, research regarding this group would be difficult to get approved and carried out.

Multiple studies within the study were conducted outside of the United States due to the especially low amount of research regarding pediatric ASD nurse training available within the US. As nursing school curriculum can vary widely across different nations, with an article from Baker et al. (2020) stating that “considerable diversity persists in the level and standards of nursing education both within and across countries,” the geographical impact on the research must be taken into consideration (p. 86). The geographical variation of studies may

result in a lack of generalizability when applying these results to applications within the US. Future research can implement further studies within the United States in order to evaluate the application of the overseas study findings.

Lastly, the application of this training among nurses, besides those specifically in pediatric hospital settings, was not addressed or analyzed. However, autistic pediatric patients can be present in various other settings, including family clinics, physical/occupational therapy settings, schools, dentist offices, and more. While research suggests positive outcomes for improved ASD training for in-hospital pediatric nurses, there exists a lack of evidence regarding the effectiveness of strategy-based ASD training in other healthcare settings. Researchers can focus on implementing and analyzing the impact of similar, yet tailored training programs for various other professions who routinely encounter these patients in the future.

Recommendations for Future Research

Limitations previously described also present opportunities to improve care for patients with ASD. The impact of strategy-focused ASD training on parent and patient satisfaction should be studied, as both parties are the best indicators of the quality of patient care and overall healthcare experience. As for future research, more studies should be done within the United States and across various practices and specialties. Along with further research on training impact on pediatric nurses, implementing strategy training within multiple healthcare settings can improve the ease of care for autistic pediatric patients, regardless of where or how their care occurs. However, as each specialty and profession approaches patient care differently, it is crucial for training to adhere to the needs of each specific healthcare role.

Conclusion

Pediatric patients with ASD require specialized care in order to best accommodate their behavioral needs, which poses a challenge for nurses. With pertinent gaps in care evident through patient experiences, it is of the utmost importance to identify these gaps and strengthen the necessary training available to nurses within this specialty. This study aimed to identify those gaps and offer recommendations based on previously successful approaches. The findings show that strategies to care for pediatric autistic patients, for both nursing students and current nurses, must be included in training in order for it to be effective. While ASD knowledge is still important, it does not equate to adequate patient care, indicating that strategy-driven training is necessary for this patient population.

Funding

This study was unfunded.

Appendix A

Literature Review Matrix

Author/Year Published	Purpose/Problem/Objectives/Aims	Study Design	Sample Setting	Data Collection/Measure	Analysis/Outcomes	Strengths/Limitations	Quality/Level of Evidence
Cashin, A., Pracilio, A., Buckley, T., Morphet, J., Kersten, M., Trollor, J. N., Griffin, K., Bryce, J., & Wilson, N. J. (2021). A cross-practice context exploration of nursing preparedness and comfort to care for people with intellectual disability and autism. *Journal of Clinical Nursing, 31*(19–20), 2971–2980. https://doi.org/10.1111/jocn.16131	To compare RN self-perceived preparedness, knowledge, comfort, and confidence in working with ASD/ID patients across differing areas of practice.	Cross-sectional Descriptive Study	639 registered nurses' responses were included	A descriptive survey tool was used, along with a comparative inferential analysis of dependent variables including age, time since initial licensure, educational context and exposure, knowledge, comfort, and confidence.	Those working in an ID/ASD nursing role felt most comfortable and prepared to work with these patients. Self-reported knowledge, confidence, and comfort was significantly associated with greater exposure to ID/ASD in undergraduate content and clinical placement.	Strengths: Address comfort/preparedness across multiple disciplines. The authors use variables other than practice area to compare results for a deeper understanding. Limitations: Those in certain contexts were significantly older or younger, possibly skewing the results. Took place in Australia, with very few participating nurses gaining licensure outside of the country.	B – Moderate Quality Level III

Conley, C.R., Wendt, L., & Schindler, C.A. (2023). Improving nurses' knowledge in caring for children with challenging behaviors. *Pediatric Nursing, 49*(3), 142-147.	To create and implement a visual schedule for children who have challenging behaviors, along with educating nurses on the evidence behind using visual acuity schedules (VAS) for these children.	QI Project implemented by a Plan, Do, Study, Act (PDSA) method	24-bed acute care unit at a large, tertiary care, Midwestern children's hospital, along with 46 nurses receiving the education.	Pre- and post-implementation surveys were used to determine effectiveness of the interventions used.	Although nurses initially had poor understanding of VAS, this improved after education was provided in both in-person sessions and handouts. These nurses felt comfortable treating patients with difficult behaviors, with this being unchanged after the education program. Nurses reported positive feedback after implementation of VAS, with improvements in VAS understanding, identifying which patients could benefit from VAS, and how to work	Strengths: The applicability to patient populations encountered on the unit. Also, the acceptance of staff in receiving the education provided. Limitations: While 46 nurses received the education, 23 completed the pre-implementation survey and 6 completed the post-implementation survey. The post-survey period was cut short due to the COVID-19 pandemic start in mid-March of 2020. Also, it was difficult to find adequate time to educate nurses in group sessions.	A – High Quality Level I

					with children's families to create a beneficial schedule.		
Díaz-Agea, J. L., Macías-Martínez, N., Leal-Costa, C., Girón-Poves, G., García-Méndez, J. A., & Jiménez-Ruiz, I. (2022). What can be improved in learning to care for people with autism? A qualitative study based on clinical nursing simulation. *Nurse Education in Practice, 65*, 103488. https://doi.org/10.1016/j.nepr.2022.103488	To identify patterns of errors that 4th year nursing students made while caring for an ASD patient in clinical simulation.	Retrospective Longitudinal Qualitative study	23 groups of students, totaling at 345 participants	Debriefings followed simulation, with a facilitator recording students' experiences. A structure of reaction, analytical, and summary phases were used. The facilitator was the professor most experienced in managing clinical simulation groups.	Different patterns of errors were identified, with each being sorted into 5 major subcategories of: clinical, communication, ASD knowledge, emotions, and behaviors towards parents. The most commonly repeated errors included excessive verbal communication, abundant stimuli, low demand of information from the patient's primary	Strengths: Implementation of the clinical simulation across various groups of nursing students, spanning across 6 years. Limitations: One facilitator was used, recording all of the student groups, whereas having multiple facilitators may have enriched the study. Also, the data was collected from a single university center.	A – High Quality Level III

					caregiver, low demand of information of the child's emotions and interests, and a lack of knowledge of the profile of the child with ASD.		
Gardner, M. (2012). Preparing nurses to care for people with developmental disabilities. *Nursing Clinics of North America*, *47*(4), 517–527. https://doi.org/10.1016/j.cnur.2012.07.010	To explore the significance of nurses in caring for developmentally disables people, education and gaps present, faculty considerations, and report research on applications of developmental disability education for nurses.	Literature review	A wide array of pertinent articles, including both randomized controlled trials, quasi-experimental trials, and nonexperimental trials.	Data was extracted from the identified articles and grouped into major categories: population considerations, education of health care providers and addressing gaps, faculty considerations, incorporation of concepts into nursing curricula, descriptive reports of educational strategies, and	As the prevalence of Autism Spectrum Disorder (ASD) and other developmental disabilities rises, it is important and challenging for nurses to gain the proper education prior to caring for this population. Gaps exist in both education and within faculty preparation/knowledge. Research shows that by	Strengths: Wide array of evidence provided. Many sources were also used throughout the article. Limitations: No proper methods and study design were presented. Paper was also only completed by one individual, limiting the amount of different perspectives.	B – Moderate Quality Level V

				available research on educational strategies.	providing strategies to undergraduate and graduate programs, nurses will be more equipped to care for the ever-changing needs of this population.		
Gardner, M., Suplee, P. D., & Jerome-D'Emilia, B. (2016). Survey of nursing faculty preparation for teaching about Autism Spectrum Disorders. *Nurse Educator, 41*(4), 212–216. https://doi.org/10.1097/nne.0000000000000237	To study nurse educators' perceived knowledge of autism and comfort levels in teaching the best nursing care for ASD patients.	Quantitative, Descriptive Study	A sample was pulled from 250 randomly selected nursing programs, departments, schools, or colleges of nursing, with 259 nursing faculty members participating.	An online survey with voluntary responses was emailed to the faculty sample through a commercially available online survey system. Data was entered into Stata version 12, with descriptive statistics and bivariate analysis using nonparametric methodology being performed.	From the population surveyed, which majorly consisted of those with graduate nursing degrees teaching in RN prelicensure programs, a low knowledge of best practices for ASD care was reported. Also, a less than optimal integration of this material, along with related clinical experiences, was	Strengths: Faculty response from a wide variety of nursing programs. There was also a large group of faculty responses. Limitations: No control was exerted over who received the participation survey and who chose to participate. While self-reported ASD knowledge was recorded, actual ASD knowledge was not tested. Also, not enough representation	B – Moderate Quality Level III

					widely reported among the faculty. Overall, the majority faculty did not feel well prepared to teach students about ASD population care. While clinical faculty felt assigning students ASD patients was important, the majority reported not doing so. Therefore, the results emphasize a need for further faculty development on ASD, along with further curriculum development.	from all nursing specialties was available.	
Khanlou, N., Khan, A., Christine, K. L., Srivastava, R.,	To identify barriers and facilitators for providing	Narrative Literature Review	17 articles were included in the review	Using the provided PRISMA flowchart, 918	Three overarching themes were identified:	Strengths: Clearly defined quality appraisal achieved with	A – High Quality Level III

McMillan, S., VanDeVelde-Coke, S., & Vazquez, L. M. (2023). Nursing care for persons with developmental disabilities: Review of literature on barriers and facilitators faced by nurses to provide care. *Nursing Open*, *10*(2), 404-423. https://doi.org/10.1002/nop2.1338	nursing care to those with developmental disabilities (DDs).	articles were identified in the search from the ProQuest and EBSCO databases. Search terms included nursing care, interventions/strategies/competencies, and intellectual/developmental disorder. The search was then narrowed down to 17 articles. Literature from January 2000 to January 2019 were included.	barriers to nursing interventions in care of those with DDs, facilitators to nursing care in promoting the health of individuals with DDs, and recommendations for nursing education, policy, and practice. Barriers and challenges to nursing interventions included time constraints/insufficient staffing, communication challenges, and insufficient education or training. Facilitators to nursing care included tools and focused resources,	three researchers. A robust search strategy was also included. Limitations: A narrative review approach was utilized, so only readily available literature could be included. Also, various study designs were included in the review.	

nursing strategies for challenging behaviors, and collaborating with the healthcare team/healthcare staff/family caregivers. Recommendations included better access to information for nurses, better nursing and healthcare team education and training, more collaboration, improving informal communication/interaction with patients, promoting standardized assessment tools, and creating a safe environment.

Mahoney, W. J., Abraham, G., & Villacrusis, M. (2023). Many hands working together: Adapting hospital care to support autistic children's mental health. *American Journal of Occupational Therapy, 77*(2), 1–10. https://doi.org/10.5014/ajot.2023.050032	To determine how nursing staff's knowledge, efficacy, and confidence are impacted by an interprofessional program focused on supporting autistic children's mental health.	Quasi-experimental Survey Design	Large Midwestern pediatric hospital across two campuses, with 300 nursing staff receiving training and 107 completing the program surveys.	A researcher-developed pre- and post-implementation survey assessing knowledge, perceived program effectiveness, confidence, and ASD strategies was provided to nursing staff prior to and after program implementation.	Respondents of the program survey indicated much higher confidence in utilizing the program's resources, utilizing more strategies in supporting autistic children's mental health, and in feeling more effective in understanding the autistic child's communication and calming needs. Also, post-test respondents mostly agreed that adequate tools and resources for working with autistic children were available. While the overall	Strengths: Resource revisions were based on input from nursing staff, increasing the likelihood of their utilization. Several nurses were trained in teaching other nurses about the program, leading to wider audience being trained on the Adaptive Care program. The combination of training allowed many nurses to be trained over a few months. Limitations: While the overall survey response rate was 35.67%, it was only 11.67% for the post-test and 6% for completion of both. Limited time available between the	B – Moderate Quality Level II

					knowledge about ASD among staff did not drastically change during the program, as it was relatively high prior to implementation, the strategy and confidence changes in the post-survey support the past research suggesting that health care providers with high ASD knowledge may still show limited confidence/comfort in supporting children with ASD in the healthcare setting.	training and the posttest survey meant participants may have had limited opportunities to utilize the Adaptive Care program.	
Mahoney, W. J., Villacrusis, M., Sompolski, M., Iwanski, B., Charman, A.,	To describe nursing staff's perspectives and strategies for working with	Cross-sectional Descriptive Study	90 nursing staff members participated, all employed at a large US	A researcher-designed survey included participant demographics,	While respondents recorded 90% accurate knowledge of	Strengths: Rather than respondents recording self-perceived knowledge of	A - High Quality Level III

Hammond, C., & Abraham, G. (2021). Nursing care for pediatric patients with Autism Spectrum Disorders: A cross-sectional survey of perceptions and strategies. *Journal for Specialists in Pediatric Nursing, 26*(4), 1–9. https://doi.org/10.1111/jspn.12332	children with ASD in the hospital setting, along with the relationships between both factors.	pediatric hospital system.	ASD knowledge, perceived effectiveness in caring for a child with ASD, previous training provided, and current strategy use. Descriptive statistics, correlations, and group comparisons were all utilized for data analysis.	ASD characteristics based on 8 T/F questions, self-reported effectiveness did not correlate. Effectiveness significantly correlated with increased number of strategies, while strategies correlated strongly with more frequent nursing interactions with ASD patients. Previous training also correlated strongly with more strategies in caring for ASD patients. 35% of the participants recorded having adequate strategies to care for autistic	ASD, the survey included T/F questions. Questions also assessed participants' demographics, including past experience with ASD in both personal and professional life. Limitations: While training was not found to be a significant factor affecting effectiveness or knowledge of ASD, the variety, extent, and quality of previous training was not assessed. Also, all nursing staff who participated cited experience working with at least one autistic child in the hospital setting, which could represent a self-

McCarthy, A. M., & Wyatt, J. S. (2014). Undergraduate pediatric nursing education: Issues, challenges and recommendations. *Journal of Professional Nursing, 30*(2), 130–138. https://doi.org/10.1016/j.profnurs.2013.07.003	To describe content and clinical experiences in undergraduate pediatric nursing education across the US as to identify current trends and challenges in providing pediatric education in BSN programs. Also, to determine recommendations regarding how to strengthen pediatric nursing curriculum based off survey findings.	Descriptive Survey Study	344 schools' responses from the American Associated of Colleges of Nursing were prepared for data analysis, with 275 schools completing the entire survey.	A 39-question online survey with a combination of closed- and open-ended questions were provided. Sections covered include description of college/school of nursing, the faculty, didactic curriculum, clinical experiences, and perceived barriers to implementing pediatric learning objectives. Frequency and crosstabs were used for categorical data, and means, standard deviation, medians, and	While a mean of 33 faculty per program was recorded, an average of 3.1 faculty with graduate specialization and/or recent pediatric clinical experiences included. While a mean of 43 classroom hours centered on pediatrics was found, 59% of programs reported 2 hours or less in pediatric genetics, environmental health, and child nutrition. Content was focused on acute and specialty pediatric care, with clinicals using pediatric children in the hospital setting.	Strengths: Survey answers included a vast sample size, with schools around the nation responding. Also, schools with various program sizes and financial supports were included in the survey. This allows for a broad and comprehensive look into the aim of the study. Limitations: Different ranges of student groups were included, with some programs including all 4 years of students versus only including upper division students. RN to BSN students may have also been included selection bias for the survey.	A - High Quality Level III

				ranges were used for continuous data. Chi-squared tests, *t* tests, and analysis of variance were used for group comparisons as needed.	inpatient medical units (68%) and surgical units (40%). Reported barriers included moderate-extreme difficulty in recruiting pediatric faculty, along with competition for clinical practice sites.	in counts despite previously asking faculty not to. Also, a question that included reporting the number of pediatric-teaching faculty up to 5+, limiting analysis and ability to accurately report the total number.	
McIntosh, C. E., Thomas, C. M., Wilczynski, S., & McIntosh, D. E. (2018). Increasing nursing students' knowledge of Autism Spectrum Disorder by using a standardized patient. *Nursing Education Perspectives, 39*(1), 32–34.	To evaluate the impact on knowledge and skills of senior nursing students when using a standardized patient with ASD.	Qualitative Retrospective Longitudinal Study	84 nursing students attending a Midwestern university.	A simulated patient, playing at 14-year-old with ASD, who experienced a fractured humerus being admitted to the emergency department, along with a simulated person playing the mother of the patient. Symptoms simulated include	Outcomes: 83 of the 84 nursing students completed the post-simulation questionnaire. 96% of the nursing students stated that the simulated patient provided a real example of what caring for a patient with ASD is like. All students also agreed that	Strengths: The simulated patient and mother were individuals with strong backgrounds and knowledge of ASD, creating a more realistic situation. Participants answered both closed-ended and open-ended survey questions analyzing the simulation, allowing for a	A - High Quality Level III

https://doi.org/10.1097/01.nep.0000000000000179	communication challenges, repetitive behaviors, physical tantrums, aggressive acts, and use of foul language. Simulation included students completing a discharge assessment on the humerus cast, provide instruction on cast care, and follow-up with a healthcare provider. A 21-item survey was provided after the simulation to evaluate the simulation as a whole, the simulation effectiveness on increasing students' ASD knowledge, and	having a patient actor provided a more realistic simulation. Majority of students reported using communication strategies learned previous in the classroom, as well as the majority agreeing that the supplemental information presented prior in the classroom and online was helpful for the simulation. Only 36% of the students agreed that the use of exam questions on ASD were helpful. 63% of survey participants agreed or strongly agreed that they were	deeper understanding of what prior teaching is necessary when working with an ASD patient. Limitations: All nursing students were from the same school, limiting the number of diverse perspectives. Also, the simulation required 4 nursing students per simulation, which may not be realistic when comparing to a real clinic experience.

	the effectiveness of increasing students' skills when caring for a patient with ASD.	able to implement strategies learned in the classroom regarding how to defuse meltdowns during the simulation. 98% of students also reported that the simulation required them to be able to anticipate and deal with difficult behaviors.

References

Autism and Developmental Disabilities Monitoring (ADDM) Network. (2024, January 10). *Data and statistics on autism spectrum disorder*. Centers for Disease Control and Prevention. Retrieved March 1, 2024, from https://www.cdc.gov/ncbddd/autism/data.html

Baker, C., Cary, A. H., & da Conceicao Bento, M. (2021). Global standards for professional nursing education: The time is now. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing, 37*(1), 86–92. https://doi.org/10.1016/j.profnurs.2020.10.001

Bougeard, C., Picarel-Blanchot, F., Schmid, R., Campbell, R., & Buitelaar, J. K. (2021). Prevalence of autism spectrum disorder and co-morbidities in children and adolescents: A systematic literature review. *Frontiers in Psychiatry, 12*, 1–16. https://doi.org/10.3389/fpsyt.2021.744709

Call, N. A., Bernstein, A. M., Bottini, S., Kalia, M., Pattishall, A. E., & Muething, C. S. (2022). Expanding upon best practice approaches to caring for children with autism spectrum disorder who engage in challenging behavior in hospital settings using behavior analytic principles: A scoping review. *Pediatric Nursing, 48*(6), 283–295.

Cashin, A., Pracilio, A., Buckley, T., Morphet, J., Kersten, M., Trollor, J. N., Griffin, K., Bryce, J., & Wilson, N. J. (2021). A cross-practice context exploration of nursing preparedness and comfort to care for people with intellectual disability and autism. *Journal of Clinical Nursing*, *31*(19–20), 2971–2980. https://doi.org/10.1111/jocn.16131

Celia, T., Freysteinson, W. W., & Frye, R. E. (2016). Concurrent medical conditions in autism spectrum disorders. *Pediatric Nursing, 42*(5), 230–234.

Conley, C.R., Wendt, L., & Schindler, C.A. (2023). Improving nurses' knowledge in caring for children with challenging behaviors. *Pediatric Nursing, 49*(3), 142-147.

Díaz-Agea, J. L., Macías-Martínez, N., Leal-Costa, C., Girón-Poves, G., García-Méndez, J. A., & Jiménez-Ruiz, I. (2022). What can be improved in learning to care for people with autism? A qualitative study based on clinical nursing simulation. *Nurse Education in Practice*, *65*, 103488. https://doi.org/10.1016/j.nepr.2022.103488

Gardner, M. (2012). Preparing nurses to care for people with developmental disabilities. *Nursing Clinics of North America, 47*(4), 517–527. https://doi.org/10.1016/j.cnur.2012.07.010

Gardner, M., Suplee, P. D., & Jerome-D'Emilia, B. (2016). Survey of nursing faculty preparation for teaching about autism spectrum disorders. *Nurse Educator, 41*(4), 212–216. https://doi.org/10.1097/nne.0000000000000237

Khanlou, N., Khan, A., Landy, C. K., Srivastava, R., McMillan, S., VanDeVelde-Coke, S., & Vázquez, L. M. (2022). Nursing care for persons with developmental disabilities: Review of literature on barriers and facilitators faced by nurses to provide care. *Nursing Open, 10*(2), 404–423. https://doi.org/10.1002/nop2.1338

Maenner, M. J., Warren, Z., Williams, A. R., Amoakohene, E., Bakian, A. V., Bilder, D. A., Durkin, M. S., Fitzgerald, R. T., Furnier, S. M., Hughes, M. M., Ladd-Acosta, C., McArthur, D., Pas, E. T., Salinas, A., Vehorn, A., Williams, S. P., Esler, A., Grzybowski, A., Hall-Lande, J., . . . Shaw, K. A. (2023). Prevalence and characteristics of autism spectrum disorder among children aged 8 years — Autism and developmental disabilities monitoring network, 11 sites, United States, 2020. *Morbidity and Mortality Weekly Report*, *72*(2), 1–14. https://doi.org/10.15585/mmwr.ss7202a1

Mahoney, W. J., Abraham, G., & Villacrusis, M. (2023). Many hands working together: Adapting hospital care to support autistic children's mental health. *American Journal of Occupational Therapy, 77*(2), 1–10. https://doi.org/10.5014/ajot.2023.050032

Mahoney, W. J., Villacrusis, M., Sompolski, M., Iwanski, B., Charman, A., Hammond, C., & Abraham, G. (2021). Nursing care for pediatric patients with autism spectrum disorders: A cross-sectional survey of perceptions and strategies. *Journal for Specialists in Pediatric Nursing, 26*(4), 1–9. https://doi.org/10.1111/jspn.12332

McCarthy, A. M., & Wyatt, J. S. (2014). Undergraduate pediatric nursing education: Issues, challenges and recommendations. *Journal of Professional Nursing, 30*(2), 130–138. https://doi.org/10.1016/j.profnurs.2013.07.003

McIntosh, C. E., Thomas, C. M., & Brattain, C. K. (2015). Nurses identify education and communication among professionals as essential in serving ASD children. *NASN School Nurse, 31*(3), 164–169. https://doi.org/10.1177/1942602x15580798

McIntosh, C. E., Thomas, C. M., Wilczynski, S., & McIntosh, D. E. (2018). Increasing nursing students' knowledge of autism spectrum disorder by using a standardized patient. *Nursing Education Perspectives, 39*(1), 32–34. https://doi.org/10.1097/01.nep.0000000000000179

Merriam-Webster. (2024). *Autism Spectrum Disorder definition & meaning.* https://www.merriam-webster.com/dictionary/autism%20spectrum%20disorder

Merriam-Webster. (2024). *Comorbid definition & meaning.* https://www.merriam-webster.com/dictionary/comorbid

Merriam-Webster. (2024). *Intervention definition & meaning.* https://merriam-webster.com/dictionary/intervention

National Center on Birth Defects and Developmental Disabilities (NCBDDD). (2022, March 28). *Signs and symptoms of autism spectrum disorder (ASD)*. Centers for Disease Control and Prevention. https://www.cdc.gov/ncbddd/autism/signs.html

Owen, A. M., Gary, A., & Schnetter, V. A. (2020). Nursing care of patients with autism spectrum disorder. *Nursing Made Incredibly Easy, 18*(2), 28–36. https://doi.org/10.1097/01.nme.0000653180.86134.05

Rice, C. E., Rosanoff, M., Dawson, G., Durkin, M. S., Croen, L. A., Singer, A., & Yeargin-Allsopp, M. (2012). Evaluating changes in the prevalence of the autism spectrum disorders (ASDs). *Public health reviews, 34(2)*, 1–22. https://doi.org/10.1007/BF03391685

Samsell, B., Lothman, K., Samsell, E. E., & Ideishi, R. (2022). Parents' experiences of caring for a child with autism spectrum disorder in the United States: A systematic review and metasynthesis of qualitative evidence. *Families, Systems, & Health, 40*(1), 93–104. https://doi.org/10.1037/fsh0000654

Strunk, J., Pickler, R. H., McCain, N. L., Ameringer, S., & Myers, B. J. (2014). Managing the health care needs of adolescents with autism spectrum disorder: The parents' experience. *Families, Systems, & Health, 32*(3), 328–337. https://doi.org/10.1037/a0037180