Survey and Review Article

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Nurses Caring for Adults With Autism in an Emergency Department: A Survey of Knowledge

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Abstract

Background: *Autism is a complex neurodevelopmental disorder characterized by social impairments; communication difficulties; and restricted, repetitive, and stereotyped patterns of behavior. The nurse (RN) in the emergency department (ED) is vital to the appropriate receiving, treatment, and management of the adult patient with autism.*

The ED receives patients presenting with a wide variety of injuries and maladies. This can make for a confusing and overstimulating environment for patients with autism. RNs must understand this and other uniquely challenging issues when caring for individuals with autism.

Methods: *Though autism is an active area of research, with copious resources available; there remains a dearth of studies related to nurses' knowledge in the ED setting. Nursing requires numerous levels of immediate information and this survey of knowledge and beliefs helped identify the ED nurse's educational needs and how best to provide accurate and applicable information.*

Results: *This survey found that just over half of ED nurses surveyed had accurate knowledge of autism, correctly identified its causes and comorbidities, and chose appropriate interventions.*

Conclusion: *This survey confirmed the limited knowledge and resources available for ED RNs. Further research on nursing care of adults with ASD is clearly warranted.*

Keywords: autism; neurodevelopmental; social impairments; communication difficulties

Introduction

Autism spectrum disorder (ASD) is a complex neurodevelopment disorder, characterized by significant social, communication, and behavioral challenges. People with ASD frequently appear similar to people without ASD, but when communication commences, verbal or otherwise, the differences can emerge quite quickly in terms of interaction, behavior, learning, and speaking. The severity of the impairment can vary greatly, as well as the ways the characteristics present. The ability to learn, think, and problem-solve can range from mildly difficult to profoundly challenging in all aspects of daily life.

ASD, also commonly abbreviated autism, occurs within all ethnic, socioeconomic, and age groups, affecting males four times more frequently than females (Autism Speaks, 2024). There is no known cause or cure for ASD, and the core characteristics and associated behaviors may impede or even prevent the delivery of appropriate health care.

The prevalence of ASD is clearly rising. In 1984, approximately 3.6 in 100,000 children were diagnosed with this "rare" disorder (Barbaresi et al., 2009). In 1999, the autism rate was thought to be around 4-5 in 10,000. By the year 2000, estimates had climbed to a rate of 4-5 per 1,000 children (Bertrand et al., 2001). From 2000 to only 2020, the prevalence of ASD increased from 1 in 150 children to 1 in 36, a more-than four-fold increase in only 20 years (CDC, 2024). This dramatic increase is only partly explained by increased awareness and improved diagnoses (Centers for Disease Control and Prevention, 2023). However, a true increase in the number of people with ASD cannot be ruled out, as the increase in ASD prevalence is likely due to a combination of factors (CDC, 2014) (see Figure 1). According to the CDC (2024b), data from 2017 indicated that over 5 million adults in the United States have ASD. A more current statistic comes from Autism Speaks (2024, which reports that approximately 1 in 45 adults have autism.

Autism is one of the most challenging developmental disabilities nurses can encounter in the ED setting. The RN in the ED is vital to the receiving, treatment, and management of the patient with autism who presents for emergency care. While generally considered a disorder of childhood, autism's dramatically increasing prevalence means it has become a disorder of adulthood as well. As the number of children diagnosed with autism increases, and the population ages, adult EDs are likely to encounter an increased number of patients with autism. According to (Vohra et al. 2016). the number of adult patients with autism who presented in EDs nationwide "more than doubled from 2006 to 2011." It is, therefore, imperative for ED nurses to understand the unique challenges of providing care for individuals with autism.

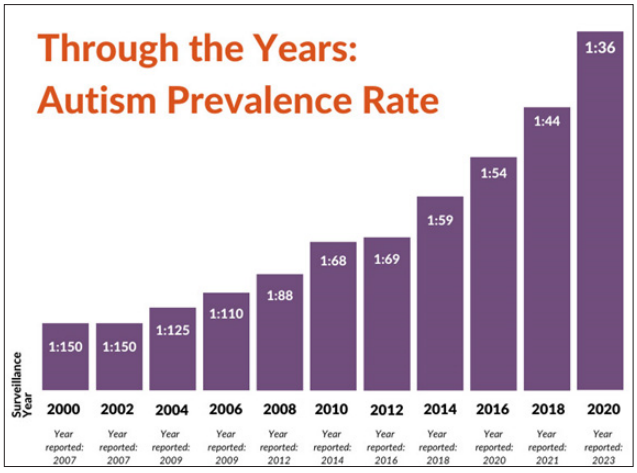

Figure 1: Prevalence rates of autism diagnoses from 2020 to 2020 (SAARC, 2023)

Methods

The purpose of this DNP project was to assess ED RN knowledge deficits and educational needs with regard to nursing care of adults with autism in the ED setting. A survey-based needs assessment revealed the kinds of educational resources that could best assist RNs who may have interactions in the ED with adults with autism.

To ascertain ED RN knowledge and understanding of autism, a convenience survey was distributed to ED nurses in a tertiary-care hospital in California's Central Valley. The survey was offered by the author at change of shift huddles over a 2-week period in the nurses' breakroom. The director of ED nursing informed the charge nurses to expect the survey and agreed to allow the nurses sufficient time for completion. The author collected the completed surveys after the 2-week period.

The purpose of the survey was two-fold: assess general knowledge of autism in RNs currently working in an ED and identify knowledge deficits and educational needs of the ED nurses. The information from this survey could serve as a needs assessment for the development of educational resources for ED RNs caring for adults with autism.

The survey was organized into simple, descriptive tables by four themes, as seen in Figure 2. Analysis of the measurements of central tendencies of the four themes was reviewed to determine which of the areas had the greatest knowledge gaps and what educational resources would best address them.

Setting

The surveyed hospital ED provides emergency care services to patients of all ages and health conditions on a 24-hour/7-day/week basis. The survey was introduced by the author at change of shift and was made available for the nurses to complete immediately and then submit to the author for collection.

Figure 2: The four survey themes to be analyzed

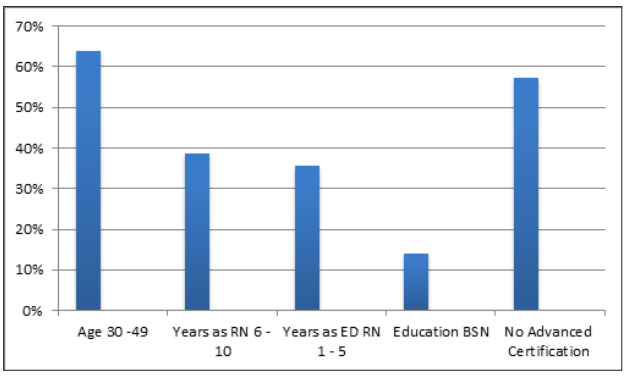

Figure 3: Demographic information collected

Instrumentation

The survey tool was developed by the author and based on literature obtained from professional sources, such as the CDC, the Diagnostic and Statistical Manual 5th edition (DSM-5), Autism Speaks, medical textbooks, and current peer-reviewed journals. The study survey comprised both quantitative and qualitative elements (see Figure 4). Specifically, 20 Likert-scaled questions with five possible responses: I Strongly Disagree, I Disagree, no opinion/Uncertain, I Agree, and I Strongly Agree. The end of the survey provided free text space for sharing personal and/or professional experiences with autism and questions, concerns, and/or thoughts. The survey was evaluated for content validity by Dr. Deborah Steele, an author and expert in human behavior (see Appendix).

1. Autism is defined as a complex, neurological developmental disorder.
2. Autism occurs more commonly among higher socioeconomic populations.
3. With proper treatment, most children outgrow autism.
4. The cause of autism is unknown.
5. Autism is caused by the MMR vaccine.
6. The cause of autism is currently a very active area of research.
7. The onset of symptoms occur usually before three years of age.
8. Criteria required for the diagnosis of autism includes difficulty with communication and difficulty with social interactions.
9. There is no known cure for autism.
10. Treatment of autism is often a combination of behavior therapy and medication.
11. According to the Centers for Disease Control, 1 child in 68 will be diagnosed with autism.
12. Poor eye contact and lack of facial expression appropriate to the situation are characteristics of severe autism.
13. Repeating words or phrases over and over are characteristics of autism.
14. Repetitive motor movements such as hand flapping are used as a method of self-calming in stressful situations.
15. Co-occurring conditions include rigid eating patterns and difficulty with sleep.
16. ED Nurses should approach a patient with autism by giving personal space, and limiting touching if possible.
17. Avoiding physical contact with patients with autism is a good approach.
18. Caregiver involvement is essential when caring for patients with autism.
19. Seizure disorders affect many adults with autism.
20. Agitated behavior can be decreased by minimizing sensory overload, such as decreasing the number of personnel in the patient's room.

Figure 4: Study survey

Results

The purpose of this DNP project was to assess ED RN knowledge deficits and educational needs by conducting a survey of general knowledge of autism and nursing care of adults with autism. The information gathered serves as a needs assessment for the development of educational resources for RNs who may have interactions in the ED with adults with autism. Data are collapsed due to the low number of respondents.

General Knowledge and Prevalence

Questions 1, 2, 3, 4, 11, 12, 13, and 14 in the survey measured ED RNs' general knowledge of ASD. Although it seems there are more questions than answers with ASD, researchers do agree that autism is a complex, neurologic development disorder, knows no socioeconomic boundaries, and is a life-long disorder. Eighty percent of the respondents agreed with the researchers overall and correctly identified ASD as a developmental disorder. Question 2 asked about the influence of individual socioeconomic status on ASD, and the majority (37%) responded "uncertain." Question 3 was correctly identified by the majority (85%), which is that one does not "grow out" of autism. For Question 4 (66%), the majority agreed that the cause of autism was unknown; 30% were uncertain. For Question 11, 69%, were aware of the latest prevalence rate published by the CDC; Questions 12, 13, and 14 asked about common characteristics of ASD and were correctly identified by 93%.

Question 1: Autism is defined as a complex, neurological developmental disorder.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	13 (42.3)	10 (38.5)	4 (15.4)	1 (3.8)	0

Question 2: Autism occurs more commonly among higher socioeconomic populations.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	0	3 (11)	12 (37)	8 (30)	6 (22)

Question 3: With proper treatment, most children outgrow autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	1 (3.7)	3 (11)	5 (18.5)	9 (33.3)	10 (33.3)

Question 4: The cause of autism is unknown.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	9 (33)	9 (33)	8 (29.7)	1 (3.7)	0

Question 11: According to the CDC, 1 child in 68 will be diagnosed with autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	5 (18.5)	14 (50)	8 (29.7)	1 (3.7)	0

Question 12: Poor eye contact and lack of facial expression appropriate to the situation are characteristics of severe autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	8(29.7)	14(50)	5(18.5)	1 (3.7)	0

Question 13: Repeating words or phrases over and over are characteristics of autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	5(3.7)	8(29.7)	11(39)	3(11)	1(3.7)

Question 14: Repetitive motor movements such as hand-flapping are used as a method of self-calming in stressful situations.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	6(21)	18(64)	5(18.5)	0	0

Theme 1: Responses

Correct response	158	66%
Incorrect response	22	9%
No opinion/uncertain	59	25%
Total responses	239	100%

Theme 2: Causes and Comorbidities

Although there is no currently known cause of ASD, researchers persist in exploring this puzzle. Over the last 5 years, scientists have identified a number of rare gene changes, or mutations, associated with autism. Most cases of autism, however, appear to be caused by a combination of autism risk genes and environmental factors influencing early brain development (Autism Speaks, 2024b). Over the years, many were concerned that vaccines caused autism. A study evaluating parents' concerns about "too many vaccines too soon" and autism was published online in the Journal of Pediatrics, on March 29, 2013. It concurred with a 2004 comprehensive review by the Institute of Medicine (IOM) that there is no causal relationship between certain vaccine types and autism (CDC, 2015). Of the surveyed RNs, 21% answered No Opinion/Uncertain to Question 5, "Autism is caused by the MMR vaccine." and 32% stated I Disagree. Even with many public health announcements since 2004 from the CDC and other stakeholders, and extensive media coverage, only 46% of the respondents answered correctly. Nurses caring for adults with autism must have current and correct information to practice care that is evidence-based and scientifically proven and to provide factual information to others.

Questions 15 and 19 asked about co-occurring conditions and comorbidities. Often, individuals with ASD have neurological, medical, and psychiatric conditions and their reported association and prevalence vary in the literature. The literature discusses seizures, gastrointestinal problems, and sleep issues as common maladies, in addition to psychiatric diagnoses; such as depression, anxiety disorders, and mood disorders. In 2006, a review of the literature revealed the co-occurrence of autism and mental retardation (Edelson 2006). It was generally assumed prior to this research that 70% to 80% of children with ASD had mental retardation. Edelson found that 55% of the empirical studies were conducted prior to 1980 and 75% prior to 1990. Edelson pointed out that the claims that a majority of children with autism have mental retardation may have been erroneously referenced in journal articles, child psychopathology textbooks, in abnormal psychology textbooks, and most troublesome, in the DSM-IV-TR criteria (Edelson 2006). Edelson's review of the literature was significant in that it demonstrated a concern for the reliability and validity of information influencing perceptions and treatments of children with ASD. As these children progress towards adulthood, where the majority of one's life is lived, one cannot overemphasize the importance of scientific research for this population so they can receive the comprehensive and appropriate course of health care they deserve. Despite the

issues within the literature, the majority of the respondents answered correctly, or No Opinion/Uncertain, with just 3% incorrect answers.

Question 5: Autism is caused by the MMR vaccine.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	1(3.7)	0	6(21)	9(32)	13(46)

Question 15: Co-occurring conditions include rigid eating patterns and difficulty with sleep.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	6(21)	11(39)	11(39)	1(3.7)	0

Question 19: Seizure disorders affect many adults with autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	0	10(36)	17(60.7)	1(3.7)	0

Theme 2: Responses

Correct response	46	58%
Incorrect response	3	3%
No opinion/uncertain	31	39%
Total responses	80	100%

Theme 3: Diagnostic Criteria and Treatment

Theme 3 covered questions 7, 8, 9, and 10 and looked at diagnostic criteria, with 82% of the ED RNs responding correctly and the highest score of correct answers within the four themes by a significant margin (82% versus 66%, Theme 1, 64%, Theme 4 and 58%, Theme 2). ASD is a growing public health problem that remains widely discussed within healthcare, education, and media venues. Autism is a complex neurodevelopmental disorder with a range in expression from mild difficulties in social communication to profound difficulties with all aspects of daily living (Giarelli & Gardner, 2012). The heterogeneity in the behavioral expression of ASDs is likely a reflection of the complex genetic profile associated with this spectrum of disorders (Caglayan 2010).

One of the most important changes in the 5th edition of the DSM is to autism-related disorders. The diagnosis of autism spectrum disorders represents a more accurate and medically and scientifically useful way of diagnosing individuals with autism-related disorders. The DSM-5 does not outline recommended treatment and services for mental disorders; instead, determining an accurate diagnosis is the first step for a clinician in defining a treatment plan for a patient. The recommendation for the DSM-5 criteria by the Neurodevelopmental Work Group is thought to be a better reflection of the state of knowledge about autism, believing a single umbrella disorder will improve the diagnosis of ASD without limiting the sensitivity of the criteria, or substantially changing the number of children being diagnosed (American Psychiatric Association, 2013). Although this DNP project focused on adults with ASD, the onset of autism is usually before the third birthday and ED RNs can expect to provide guidance and education to many people with concerns about autism.

Question 7: The onset of symptoms occurs usually before three years of age.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	8(29.7)	17(60.7)	3(11)	1(3.7)	0

Question 8: Criteria required for the diagnosis of autism includes difficulty with communication and difficulty with social skills.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	11(39)	14(50)	3(11)	1(3.7)	0

Question 9: There is no known cure for autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	9(32)	13(46)	5(18.5)	2(6)	0

Question 10: Treatment of autism is often a combination of behavior therapy and medication.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	3(11)	21(75)	5(18.5)	2(7)	0

Theme 3: Responses

Correct response	88	82%
Incorrect response	4	4%
No opinion/uncertain	15	14%
Total responses	107	100%

Theme 4: Nursing Care

Theme 4 represented questions specific to nurses providing care in a manner unique for patients with ASD. The ED RN approach can be pivotal to the outcome of the adult ED patient with ASD. Understanding the core characteristics of ASD is vital before proceeding with assessments and care and the ED nurse must recognize that the core characteristics will differ with each individual. The process of emergency care is complicated and can be overwhelming for any patient (Patrizzi & Giarelli, 2012). The patient with ASD may exhibit behaviors unfamiliar to the ED staff and others in the area. Obtaining information from the patient, family, or caregiver is essential. For example, how does the patient respond to touch, noise, light, and activity? Can the patient communicate verbally; how does the patient express pain/discomfort/anxiety? Asking these questions prior to treatment establishes a trusting, patient-centered relationship. The ED RNs answered the questions in Theme 4 correctly at 64%, with 20% uncertain of the correct response and 16% incorrectly answering. Knowledge of patient behaviors, preferences, and tendencies, as well as successful methods that have worked in prior visits, will contribute to best-practices nursing care in the ED. A thoughtfully managed ED will foster admissions experiences that begin with therapeutic encounters and remain so with other health services providers (Patrizzi & Giarelli, 2012).

Question 16: ED Nurses should approach a patient with autism by giving personal space, and, limiting touching if possible.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	6(21)	18(64)	3(11)	1(3.7)	0

Question 17: Avoiding physical contact with patients with autism is a good approach.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	3(11)	8(29.7)	11(39)	5(18.5)	1(3.7)

Question 18: Caregiver involvement is essential when caring for patients with autism.

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	17(60.7)	10(35.7)	0	1(3.7)	0

Question 20: Agitated behavior can be decreased by minimizing sensory overload such as decreasing the number of personnel in the patient's room can be beneficial to decreasing behavior escalations

	Strongly agree	I agree	No opinion/uncertain	I disagree	I strongly disagree
Number of respondents/percentage	9(32)	18(64)	0	0	0

Theme 4: Responses

Correct response	83	64%
Incorrect response	20	16%
No opinion/uncertain	27	20%
Total responses	130	100%

The survey offered two areas for free-text: (a) Please share any experiences with autism you have had either personally or professionally. and (b) Please write any questions, concerns, and/or thoughts you would like to share with Shauna Miller (author).

This author received five responses to the first free-text question and one response to the second. In the first free-text area, four nurses shared personal relationships with individuals with autism and one nurse shared her professional experience. In the second free-text area, the nurse asked if there was a correlation between autism and induction of labor.

Discussion

Conclusion

The results of the survey, when viewed in the context of the RN's general knowledge and nursing care of adults with autism, present a picture of awareness of autism, but an uncertainty of the known facts of ASD, indicating a tendency towards low confidence in caring for this population. Validating the author's premise that knowledge of autism is vital to providing appropriate nursing care, the RNs surveyed showed similar results in their levels of knowledge of autism in general (66% correct) and their ability to provide safe and effective nursing care (64% correct). Just over half (58%) of the responses were correctly identified in the causes and comorbidity theme, an area that is actively researched with few definitive answers, yet of great importance in planning care and patient/family education. The diagnostic inclusion criteria and treatment

options are topics actively researched and publicly discussed, with 82% of the RNs answering those questions correctly, validating the importance of integrating scientific and evidence-based knowledge with clinical nursing care.

Correlations were absent among the demographic data; answers were not more correct for those in particular age or gender groups, or level of education and nursing experience. Data obtained from the demographic information were not statistically significant. The RNs who identified themselves as between the ages of 26 and 39 were analyzed for an increased awareness due to possibly having young children with autism. This was nonsignificantly relevant, leading to the inclusion of general knowledge and prevalence information in the development of general knowledge resources.

Limitations

In this project, the author sought to better understand the general knowledge of RNs with regard to the characteristics of autism and the implication for nursing care to identify knowledge gaps and areas of concern. It is the first step to qualifying the issue of the impact of adults with autism on providing emergency care.

The limitations of this project were numerous: the sample size was small and limited to one ED. Asking RNs to complete a survey during change of shift could have caused some to rush through the answers without careful consideration. Some of the respondents were former students of the author, others were colleagues known to the author, which could have caused bias. Finally, the author herself was well aware of the many biases her own frame of reference brought to the project, causing her to choose one question over another and emphasize certain wording.

Implications for Nursing Practice

A nurse must comprehend the reality of the patient with ASD by attempting to view the ED through his or her eyes (Garielli & Gardner, 2012). The competent, compassionate, and careful ED RN is essential to the acceptable management of adults with autism. Working together with the patient, family, and health care team, nurses ensure effective and appropriate patient care. Knowledge of ASD and its common characteristics is invaluable when caring for these patients; however, ED nurses must recognize that each of these patients is unique and in need of individual approaches depending on the severity of needs (Giarelli & Gardner, 2012). Effective and appropriate nursing care means evidence-based care and best-practices. By increasing their knowledge of ASD, nurses can deliver effective and appropriate care, resulting in personal and patient-centered care.

A study of autism knowledge (Heidgerken et al., 2005), mostly among primary care providers (physicians) and specialists (psychiatrists who are expert in autism), reported different understandings of autism, treatment options, and prognoses. This translates to a high potential for inconsistent health care across services, settings, and professional practices (Giarelli & Gardner, 2012). Individuals with ASD may have had negative health care experiences that resulted in poor outcomes. Each and every interaction between the adult patient with ASD and the RN should be thoughtful and purposeful, resulting in a positive experience and improved outcomes.

Evidence-Based Practice (EBP) – "Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care" (Cronenwett et al., 2007) is imperative to providing a quality and safe environment for the adult patient with autism in the ED and for the health care team. Recognizing the limited research available is the first step to addressing this knowledge gap and nurses working in EDs should insist that their care and resources be guided by EBP, not only for optimal health care, but for nurse satisfaction. This survey points to how sufficient knowledge of adults with ASD, its potential causes and comorbidities, and strategies for providing nursing care would lead to more positive experiences, effective care, and integrated care plans.

Because of the prevalence of autism and its possibly overwhelming impact on the ED, it is critical that adults with autism be treated within a system that is coordinated and integrated. Without integration, all aspects of health care fall short of the ideal. Patients' needs may be incorrectly identified, services are not delivered or delayed, and quality of care and patient satisfaction break down (Charns & Tewksbury, 1993; Shortell et al., 1993). Integrated, comprehensive nursing care is the profession's response to the fragmented delivery of health and social services that characterize the care of people with ASD (Giarelli & Gardner, 2012). The ED is often the most frequent point of medical service for many patients, and may be the only point of health care, and, as such, is an ideal environment for nurses to apply their knowledge and provide coordinated and integrated care and resources to this special population.

In the survey, RNs demonstrated an awareness of the diagnostic criteria and lack of available treatment for ASD. More education on adults with ASD may be needed at all levels of health care. Caring for individuals with developmental disabilities beginning at the undergraduate level may be indicated, but a more formal educational format for ED RNs, specific to ASD, should be included in orientation and ongoing education and training. With increased knowledge of ASD, nurses can lead other members of the healthcare team as more patients with ASD reach adulthood and present for emergency care (Patrizzi & Giarelli, 2012). By teaching nurses, the core characteristics, providing appropriate resources and interventions, and utilizing a patient-centered approach, the ED RN can plan care and provide a thoughtful and therapeutic encounter for the adult with autism.

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Appendix: Demographic Tables

Table 1: Ages of Survey Respondents (in Years)

Age	Frequency	Percent
26 – 29	3	10.7
30 – 39	9	32.1
40 – 49	9	32.1
50 - 59	4	14.3
60 - 66	1	3.6
Total	26	92.7
Missing	2	7.3

Table 2: Years as RN

Years as RN	Frequency	Percent
< 1 yr	2	7.3
1 – 5	6	21.4
6 - 10	8	28.5
11 - 20	6	21.4
> 20	5	17.8
Total	27	96.4
Missing	1	3.6
< 1yr	2	7.3
Total	28	100.0

Table 3: Years as RN in ED

Years as RN	Frequency	Percent
< 1 yr	2	7.3
1 – 5	10	35.7
6 - 10	6	21.2
11 - 20	2	7.3
> 20	2	7.3
Total	22	79.0
Missing	6	21.2
Total	28	100.0

Table 4: Nursing Education

Degree	Frequency	Percent
AA	7	25.0
BSN	14	50.0
MSN	4	14.3
	2	7.3
Total	27	96.4
Missing	1	3.6
Total	28	100.0

Table 5: Advanced Emergency Nursing Certification

	Frequency	Percent
Yes	12	42.8
No/blank	16	57.2
Total	28	100.0

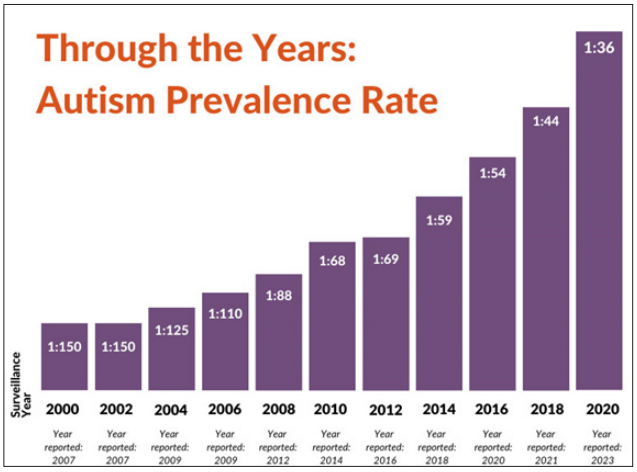

Figure 1: Prevalence rates of autism diagnoses from 2020 to 2020 (SAARC, 2023)

Figure 2: The Ten Components of Recovery (The American Psychological Association, 2024)

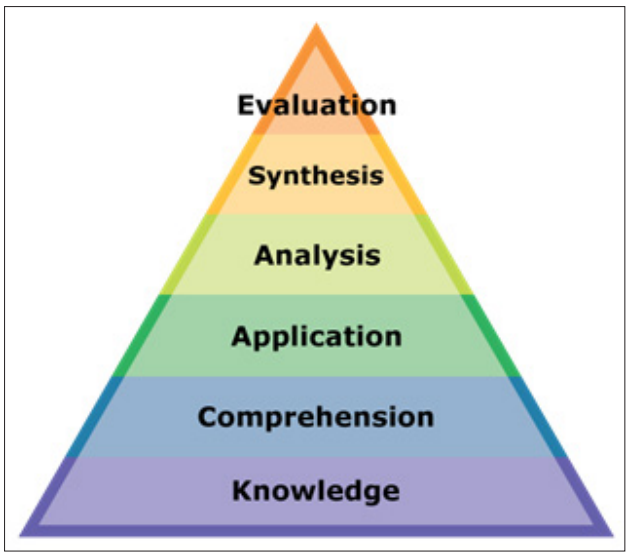

Figure 3: Bloom's Taxonomy (Original) (Armstrong, 2010)

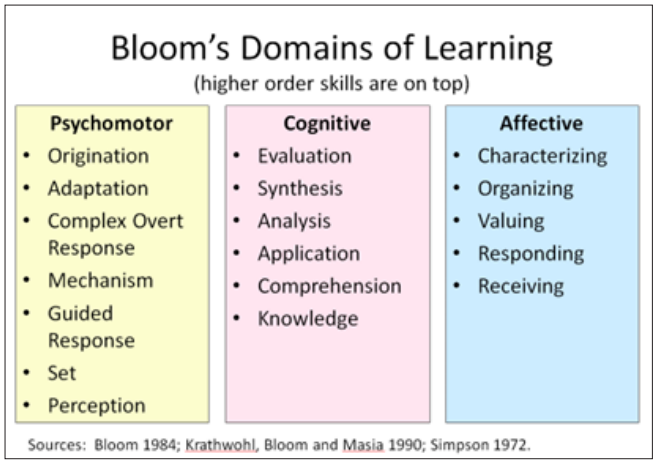

Figure 4: Bloom's Domains of Learning (Bloom's Taxonomy. Centre for Teaching Excellence, University of Waterloo)

Figure 5: The Four Themes of Survey for Survey Analysis

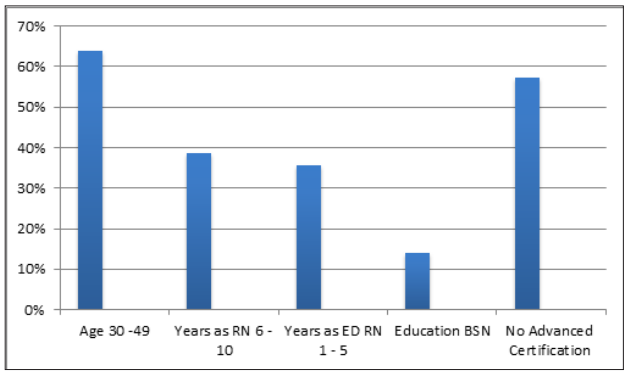

Figure 6: Demographic Information Collected