



Managing sensory sensitivities in autistic patients through nursing interventions

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Abstract

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by challenges in social communication, restricted interests, and repetitive behaviors. Among its most significant and pervasive features are sensory sensitivities, which manifest as either hyperreactivity or hyporeactivity to sensory stimuli such as sound, light, touch, taste, or movement. These altered sensory responses can make ordinary environments overwhelming or confusing, leading to distress, avoidance behaviors, or emotional outbursts. In healthcare settings, where unfamiliar sounds, bright lights, and physical contact are common, such sensitivities often complicate assessment and treatment, increasing anxiety for patients and families. Nurses play a vital role in recognizing and managing sensory issues among autistic patients. Their responsibilities extend beyond medical procedures to creating calm, predictable, and inclusive environments. Through individualized sensory assessments, environmental modifications, desensitization techniques, and collaboration with families, nurses can minimize overstimulation and improve patient cooperation. Evidence-based strategies such as reducing noise, adjusting lighting, and using visual aids or sensory tools are essential components of nursing practice for autistic care. Interdisciplinary collaboration with occupational therapists, psychologists, and educators strengthens the effectiveness of sensory interventions. Furthermore, continuous professional education in autism care equips nurses with the knowledge and confidence to provide equitable, compassionate, and patient-centered support. Managing sensory sensitivities in autistic individuals not only improves clinical outcomes but also reflects a commitment to inclusive healthcare aligned with Sustainable Development Goals.

Keywords: Autism Spectrum Disorder, hypersensitivity, sensory modulation, patient-centered care, neurodiversity etc.

Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by persistent challenges in social interaction, communication, and restricted or repetitive behaviors (American Psychiatric Association, 2022) ^[1]. It is estimated that approximately one in every hundred children worldwide is diagnosed with ASD, a number that continues to increase due to greater awareness, improved diagnostic tools, and broader recognition of the condition's diverse presentation (World Health Organization, 2023). Although diagnostic criteria for autism historically focused on behavioral and social dimensions, sensory sensitivities have now been formally recognized as one of its defining features (Robertson & Baron-Cohen, 2017) ^[19]. These sensory differences may manifest as hyperreactivity, hyporeactivity, or sensory-seeking behaviors, significantly influencing how individuals perceive and interact with their environment (Ben-Sasson *et al.*, 2021) ^[3]. For autistic individuals, everyday environmental stimuli such as bright lighting, machine noises, clothing textures, or even subtle background sounds can be overwhelming or painful, often resulting in anxiety or distress (Klintwall & Fernell, 2020) ^[10]. These sensory processing differences can impact

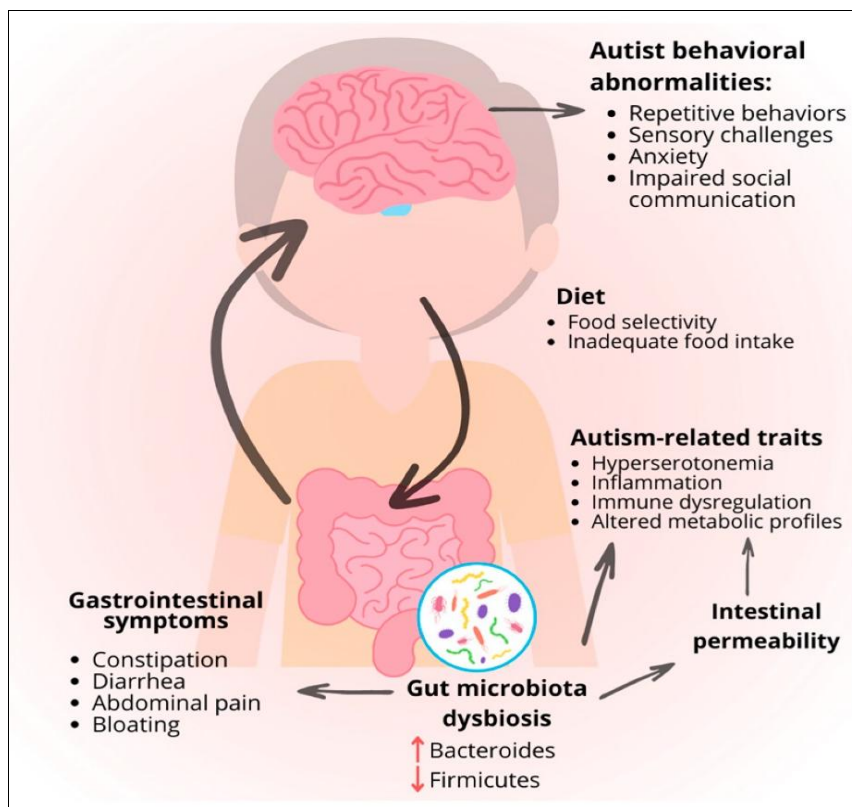
participation in educational, social, and healthcare activities, sometimes leading to withdrawal, agitation, or behaviors misinterpreted as noncompliance (McCormick *et al.*, 2022) ^[15]. In healthcare settings, where stimuli are unpredictable and sometimes intense, such reactions can compromise both comfort and the quality of care provided (Harrow & Lloyd, 2020) ^[8]. Nurses, as the primary caregivers, hold a central role in addressing these challenges. They are uniquely positioned to observe sensory triggers, design adaptive interventions, and collaborate with families and interdisciplinary teams to ensure sensory-informed care (Patel & Shah, 2023) ^[17]. Nursing care for autistic patients extends beyond routine physical or medical procedures it requires empathy, patience, and a deep understanding of neurological diversity to provide holistic and compassionate support tailored to each individual's sensory profile (Lima *et al.*, 2019) ^[12].

The Nature of Sensory Sensitivities in Autism

Sensory processing involves how the nervous system receives, interprets, and organizes information from both the environment and the body. In neurotypical individuals, this allows appropriate responses to daily experiences. In autistic

individuals, differences in neural connectivity can lead to hypersensitivity, where stimuli like light, sound, or touch feel overwhelming, or hyposensitivity, where sensory input is under-recognized. Some may engage in sensory-seeking behaviors to self-regulate. These responses can vary with

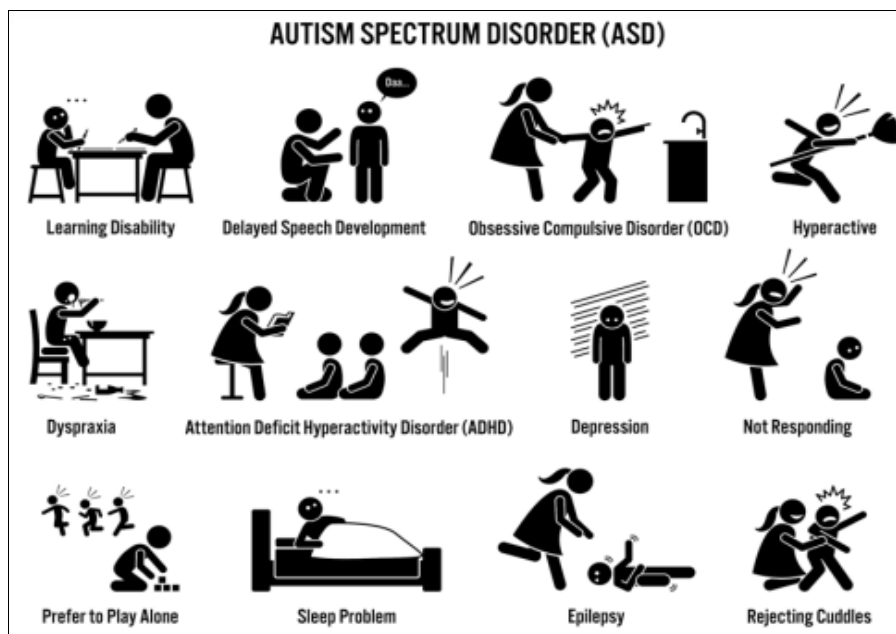
mood, fatigue, or context. By understanding these patterns, nurses can interpret behaviors accurately, adjust environmental factors, provide predictable routines, and create supportive, sensory-aware care that respects neurodiversity.



Sensory Experiences in Clinical Environments

Hospital environments can be overwhelming for autistic patients due to bright lights, echoing corridors, constant monitor beeps, unfamiliar smells, and unpredictable activity, often causing anxiety and behavioral distress. Routine procedures like vital sign monitoring may trigger discomfort from cold stethoscopes, tight blood pressure cuffs, or

vibrating equipment. Nurses can reduce stress by preparing patients with explanations, demonstrations, or visual cues, and by making simple sensory adjustments such as dimming lights, warming instruments, minimizing noise, and using communication aids. These strategies foster predictability, comfort, and trust, supporting respectful, inclusive, and sensory-sensitive care throughout hospitalization.



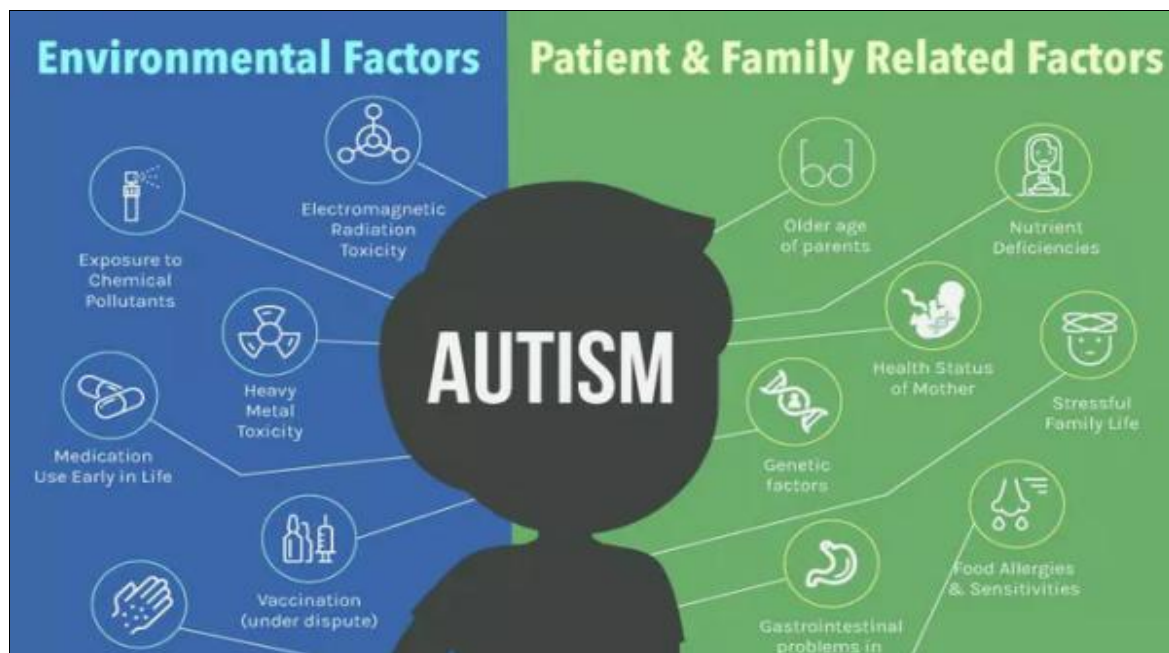
The Nursing Role in Managing Sensory Sensitivities

Effective nursing care for autistic individuals with sensory sensitivities requires the integration of clinical expertise, creativity, and empathy. Assessment is the foundation, allowing nurses to identify sensory triggers through observation, caregiver input, and structured tools such as the Sensory Profile 2 (Dunn, 2014) [6]. Recognizing responses to light, sound, touch, or movement enables individualized care planning (Marco *et al.*, 2011) [13]. Environmental modification is a key intervention; adjusting lighting, reducing noise, and providing aids like weighted blankets or fidget tools can enhance comfort (Harrow & Lloyd, 2020) [8]. Familiar objects such as headphones or sunglasses further reduce anxiety (Ben-Sasson *et al.*, 2021) [3]. Communication support is equally vital, as many autistic individuals depend on visual cues or need extra time to process verbal input (Robertson & Baron-Cohen, 2017) [19]. Using concise language, pictorial charts, and predictable routines improves cooperation (Patel & Shah, 2023) [17]. Collaboration with families strengthens care, as caregivers provide insight into triggers and soothing strategies (Lima &

Guimarães, 2019) [12]. Through these combined efforts, sensory-informed nursing transforms healthcare interactions into experiences grounded in empathy, trust, and respect for neurodiversity.

Holistic and Empathetic Care

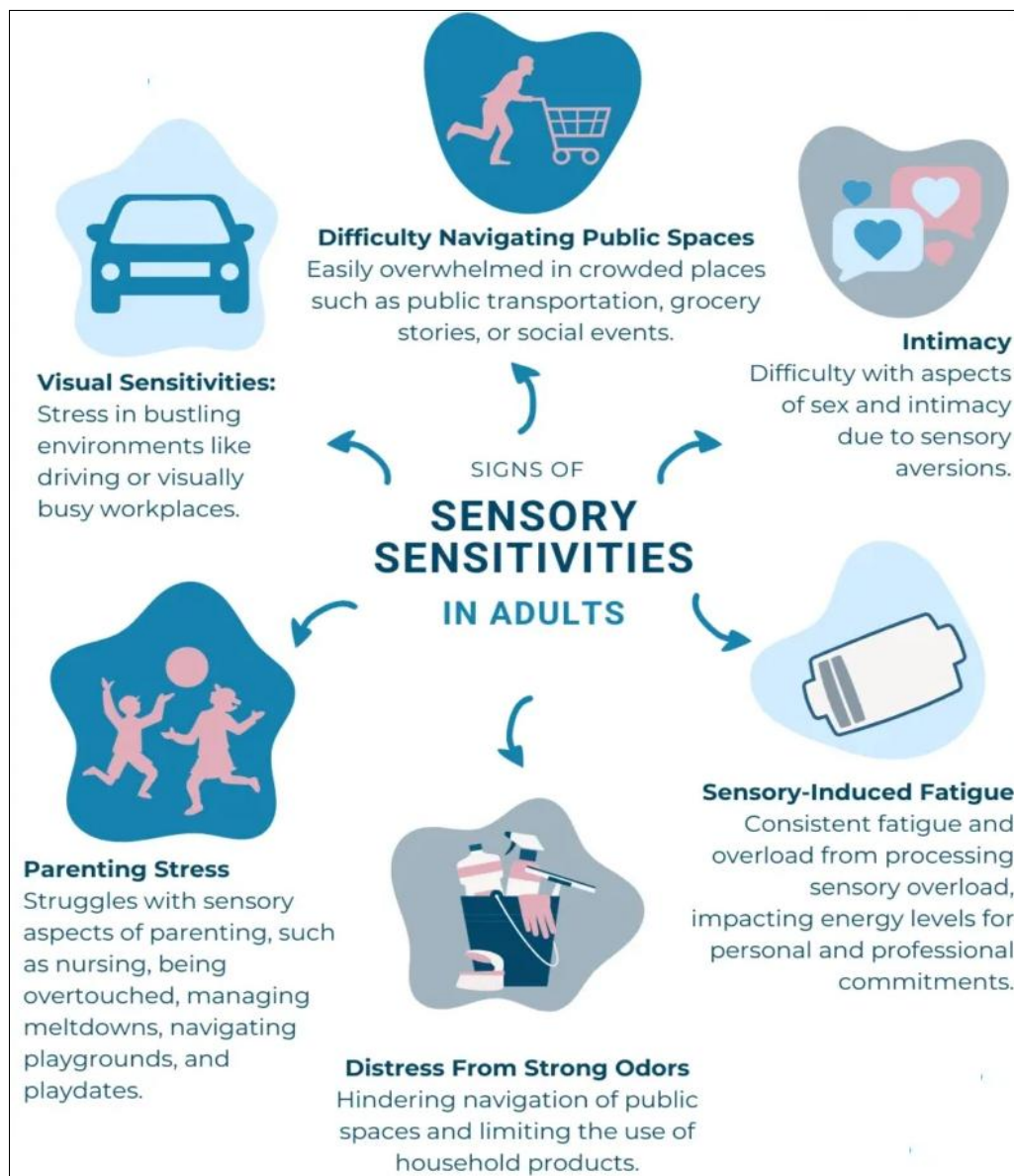
Managing sensory sensitivities in autistic patients requires empathy, structure, and understanding. Nurses must recognize that behaviors often perceived as challenging are protective responses to sensory overload (Robertson & Baron-Cohen, 2017; Ben-Sasson *et al.*, 2021) [19, 3]. By reducing stimuli, offering calm spaces, and using step-by-step communication, nurses can foster safety and trust (McCormick *et al.*, 2022) [15]. Predictable routines and visual supports help reduce anxiety, while encouraging small choices enhances autonomy (Patel & Shah, 2023; Lima & Guimarães, 2019) [17, 12]. Sensory-informed nursing care thus transforms distress into comfort, empowering autistic patients through compassionate, individualized, and inclusive healthcare that respects their sensory and emotional needs.



Professional Competence and Training

Implementing sensory-informed care requires nurses to receive specialized training in autism awareness and sensory processing theory. Educational programs should teach recognition of sensory behaviors, environmental adaptations, and use of alternative communication methods (Dunn, 2014) [6]. Ongoing professional development enhances competence in sensory modulation therapies,

desensitization strategies, and interdisciplinary collaboration with occupational therapists and psychologists (Marco *et al.*, 2011) [13]. Hospitals should institutionalize sensory-friendly protocols, including designated calm zones, caregiver flexibility, and standardized sensory assessments (Harrow & Lloyd, 2020) [8]. Embedding these approaches into policy supports inclusive, equitable, and patient-centered healthcare for autistic individuals (Patel & Shah, 2023) [17].



The Broader Impact of Sensory-Based Nursing

When nurses effectively manage sensory sensitivities, the benefits extend beyond immediate comfort. Sensory-adapted care reduces physiological stress, agitation, and noncompliance in autistic individuals (Ben-Sasson *et al.*, 2021) ^[3]. Patients in sensory-friendly settings show better cooperation and emotional regulation, while families experience less caregiver stress and greater satisfaction (McCormick *et al.*, 2022) ^[15]. For healthcare teams, such environments improve communication, safety, and workflow efficiency by minimizing distress-related disruptions (Harrow & Lloyd, 2020) ^[8]. On a larger scale, sensory-informed nursing aligns with global goals for inclusive healthcare, supporting SDG 3 and SDG 4 through compassion and equity (World Health Organization, 2023; Patel & Shah, 2023) ^[17].

Sensory Processing in Autism

Sensory processing refers to the way the nervous system receives, organizes, and interprets sensory information from both the external environment and the body's internal systems. This process enables individuals to respond

appropriately to sensory stimuli such as sound, light, touch, movement, smell, and taste (Dunn, 2014) ^[6]. In neurotypical individuals, the brain filters and prioritizes sensory input efficiently, allowing smooth adaptation to changing surroundings. However, in individuals with Autism Spectrum Disorder (ASD), atypical sensory integration within neural pathways often results in irregularities in how sensory information is processed (Marco *et al.*, 2011) ^[13]. These variations are linked to altered activity in brain regions such as the thalamus, amygdala, and sensory cortex, which regulate sensory modulation and emotional responses (Robertson & Baron-Cohen, 2017) ^[19]. Sensory differences in autism manifest through hyperreactivity, hyporeactivity, or sensory-seeking behaviors. Hyperreactivity involves over-sensitivity to stimuli, where ordinary sounds, lights, or textures may be perceived as overwhelming or painful (Ben-Sasson *et al.*, 2021) ^[3]. For instance, a child might cover their ears to block loud noises or avoid eye contact in brightly lit environments. Conversely, hyporeactivity reflects reduced responsiveness, where individuals may appear unresponsive to pain, temperature changes, or auditory cues (Klintwall & Fernell, 2020) ^[10]. Sensory

seeking, often occurring alongside these responses, involves repetitive or intense engagement with certain sensations such as spinning, touching textures, or applying deep pressure to achieve regulation or comfort (Lima & Guimarães, 2019) ^[12] (Harrow & Lloyd, 2020 ^[8]). Recognizing such challenges, nurses must approach care with patience and sensory awareness to reduce distress and build trust. Effective nursing management begins with thorough assessment. Nurses should observe behavioral cues such as covering ears, withdrawal, or repetitive movements to identify sensory triggers. Gathering caregiver input and using structured tools like the Sensory Profile 2 provides valuable insights into sensory preferences and thresholds (Dunn, 2014) ^[6]. Based on assessment, environmental modifications can be implemented, including dimming lights, minimizing background noise, and allowing the use of comfort objects like headphones or weighted blankets (Patel & Shah, 2023) ^[17].

Types and Manifestations of Sensory Sensitivities

Autistic individuals experience the world through sensory systems that function differently from those of neurotypical individuals. Sensory sensitivities can occur across multiple domains sight, sound, touch, taste, smell, balance, and body awareness and can appear as either hypersensitivity, where stimuli feel overwhelming, or hyposensitivity, where stimuli are barely registered (Robertson & Baron-Cohen, 2017) ^[19]. These variations influence how autistic individuals interact with their surroundings, communicate, and respond to care (Ben-Sasson *et al.*, 2021) ^[3]. Understanding these differences is essential for nurses, as sensory-related distress can hinder assessment, treatment, and patient cooperation in healthcare settings (Harrow & Lloyd, 2020) ^[8]. Table 1 below summarizes the major sensory domains and common behavioral patterns observed in hypersensitivity and hyposensitivity among autistic individuals (Dunn, 2014) ^[6].

Table 1: Types of Sensory Sensitivities and Behavioral Manifestations

Sensory Domain	Hypersensitivity (Over-response)	Hyposensitivity (Under-response)
Visual	Discomfort from bright lights or busy patterns	Fascination with spinning or flashing objects
Auditory	Covering ears, distress at loud noises	Not responding to name or sounds
Tactile	Avoidance of touch, discomfort with textures	Seeking pressure or rough play
Olfactory	Strong aversion to perfumes or food smells	Sniffing objects repeatedly
Gustatory	Limited food preferences, gag reflex	Mouthing non-food items
Vestibular	Fear of movement or height	Spinning or rocking behaviors
Proprioceptive	Discomfort during physical contact	Craving deep pressure or heavy work

Sensory symptoms vary greatly from person to person, even among those with the same diagnosis (Robertson & Baron-Cohen, 2017) ^[19]. A child who avoids touch may react negatively to gentle physical contact but seek deep pressure for comfort (Ben-Sasson *et al.*, 2021) ^[3]. Another may crave motion and enjoy spinning, while a different child may experience dizziness or fear from minimal movement (Klintwall & Fernell, 2020) ^[10]. Such variations emphasize the need for flexible and individualized nursing approaches (Lima & Guimarães, 2019) ^[12]. In the visual domain, hypersensitive individuals may struggle with bright hospital lights, fast-moving patterns, or shiny instruments, leading to anxiety or avoidance behaviors. Those with visual hyposensitivity may seek extra stimulation by staring at spinning fans or light reflections. Auditory hypersensitivity, one of the most common sensory challenges, can cause distress in response to alarms, conversations, or machinery sounds (Harrow & Lloyd, 2020) ^[8]. These patients may cover their ears or hum to block noise. In contrast, auditory hyposensitivity may result in delayed responses to verbal cues, requiring repeated or visual communication. Tactile sensitivity affects tolerance to physical contact and textures. Hypersensitive individuals might resist medical touch, clothing tags, or rough fabrics, interpreting them as painful, while hyposensitive individuals may crave tactile input through rough play or frequent touching. Olfactory and gustatory sensitivities affect feeding and comfort strong smells can cause nausea or avoidance, while hyposensitive individuals may seek intense flavors or mouth non-food items. Vestibular and proprioceptive sensitivities influence balance, motion, and body awareness (Marco *et al.*, 2011) ^[13]. Hypersensitive individuals may fear movement or lose balance easily, while those with hyposensitivity may seek

spinning or jumping to self-regulate. Providing structured movement breaks or weighted sensory tools can assist in these cases. For nurses, recognizing sensory triggers and adapting the care environment is critical (Patel & Shah, 2023) ^[17].

Challenges Faced by Nurses

Caring for autistic individuals who experience sensory sensitivities is a demanding yet rewarding responsibility for nurses. Sensory issues can make even routine clinical procedures stressful, requiring a high degree of patience, empathy, and flexibility (Harrow & Lloyd, 2020) ^[8]. Understanding the challenges faced by healthcare professionals is the first step toward creating supportive, inclusive, and effective care environments (Robertson & Baron-Cohen, 2017) ^[19]. The following points outline key challenges and their implications for nursing practice (Patel & Shah, 2023) ^[17].

1. Environmental Overstimulation

- Hospital environments are often filled with bright lights, constant sounds, strong odors, and unpredictable activity.
- Fluorescent lights, monitor beeps, air-conditioning noise, and antiseptic smells can overwhelm autistic patients who are hypersensitive to sensory input.
- Overstimulation may lead to distress, sensory overload, or meltdowns, resulting in resistance to care and decreased cooperation.
- Nurses must recognize that these reactions are not behavioral defiance but expressions of discomfort caused by excessive sensory input.

2. Communication Barriers

- Many autistic individuals have limited verbal skills or process language differently, making it difficult to express pain, fear, or discomfort.
- Miscommunication between patients and nurses can lead to frustration, misunderstandings, and heightened anxiety.
- Nonverbal cues such as body movements, facial expressions, or avoidance behaviors often signal distress, but nurses may misinterpret them.
- Adapting communication through gestures, visual aids, written prompts, or assistive devices is essential for mutual understanding.

3. Behavioral Responses to Sensory Stress

- Sensory overload often triggers behavioral responses that may appear aggressive, self-stimulatory, or withdrawn.
- Common responses include covering ears, rocking, flapping hands, shouting, or refusing care.
- Such behaviors serve as coping mechanisms for regulating sensory input, not as intentional disruption.
- Nurses must maintain calmness, avoid confrontation, and prioritize de-escalation through soothing tones and controlled environments.

4. Time Constraints in Clinical Settings

- Acute care settings, especially emergency or high-volume wards, often operate under strict time pressures.
- Allowing sensory adjustments, gradual introductions, or communication accommodations requires additional time that may not always be available.
- Quick transitions, unfamiliar staff, and rushed procedures can overwhelm patients and reduce the quality of care.
- Balancing efficiency with sensitivity demands organizational support and flexible nursing schedules that allow patient-centered care.

5. Knowledge and Training Gaps

- Many nurses lack specialized training in autism spectrum care and sensory integration techniques.
- Limited exposure to neurodiversity education in nursing curricula leads to uncertainty and stress when caring for autistic patients.
- Without proper understanding, staff may misinterpret sensory-related behaviors as noncompliance or aggression, resulting in inappropriate responses.
- Ongoing professional development programs, simulation-based training, and interprofessional learning can build competence and confidence.

6. Emotional and Ethical Challenges

- Caring for autistic individuals with sensory sensitivities demands patience and emotional regulation from nurses.
- Repeated exposure to challenging behaviors or communication breakdowns can cause caregiver fatigue and frustration.
- Nurses must uphold ethical principles of dignity, respect, and non-coercive care, ensuring that

interventions prioritize comfort and autonomy.

- Maintaining empathy while managing workload stress requires emotional resilience and institutional support.

7. Lack of Sensory-Friendly Infrastructure

- Many hospitals are not designed with sensory-sensitive patients in mind.
- The absence of quiet rooms, adjustable lighting, and private waiting areas increases sensory distress.
- Creating designated sensory zones or providing portable sensory kits (noise-canceling headphones, weighted blankets, fidget tools) can enhance patient comfort.

8. Need for Interdisciplinary Collaboration

- Managing sensory sensitivities effectively requires teamwork between nurses, occupational therapists, psychologists, and family members.
- Inconsistent communication between professionals can result in fragmented care.
- Regular case discussions, care plans, and joint assessments help ensure coordinated sensory support strategies.

9. Family Involvement and Support

- Family members play a critical role in guiding nurses about the patient's sensory triggers and calming techniques.
- However, families may also experience stress during hospitalization, needing reassurance and inclusion in care decisions.
- Nurses must balance professional judgment with family insight to maintain consistency between home and hospital care.

10. Developing an Empathetic Framework for Sensory Management

- The foundation of successful sensory care lies in empathy, observation, and flexibility.
- Nurses should approach each patient as an individual with unique sensory needs and coping mechanisms.
- Establishing structured care routines, providing sensory adjustments, and maintaining a calm demeanor enhance trust and cooperation.
- Empathetic, sensory-informed nursing promotes patient comfort, safety, and dignity, aligning with holistic and inclusive healthcare values.

Nursing Assessment of Sensory Sensitivities

Nursing assessment forms the foundation for understanding sensory challenges in autistic individuals. Effective assessment begins with careful, systematic observation of the patient's behavioral cues and physiological responses to sensory stimuli (Dunn, 2014) ^[6]. Because autistic patients often struggle to verbalize discomfort or preferences, nurses must rely on attentive observation, caregiver input, and structured assessment tools to identify sensory patterns (Marco *et al.*, 2011) ^[13]. Collaborating with families and therapists is essential, as they can provide detailed insights into the patient's triggers, calming methods, and successful coping strategies used in home or school environments

(Lima & Guimarães, 2019)^[12]. This partnership helps create a comprehensive sensory profile that guides nursing care. Standardized tools such as the Sensory Profile 2, Dunn's Model of Sensory Processing, and the Adolescent/Adult Sensory History (AASH) are useful in identifying how individuals respond to sensory input across various domains (Dunn, 2014)^[6]. These tools categorize sensory behaviors into four primary patterns: sensory seeking, sensory avoiding, sensory sensitivity, and low registration. Understanding where a patient fits within these categories enables nurses to anticipate responses to stimuli and plan appropriate environmental modifications or communication strategies (Robertson & Baron-Cohen, 2017)^[19]. Observation should occur across different contexts, such as during rest, interaction, and clinical procedures (Patel & Shah, 2023)^[17]. Nurses must note visible reactions such as flinching at sounds, avoidance of touch, or fascination with moving lights. Physiological indicators like changes in breathing, muscle tension, or increased heart rate can also reflect sensory distress (McCormick *et al.*, 2022)^[15].



Figure: Suggested Sensory-Friendly Hospital Environment

A structured assessment approach enables nurses to recognize patterns of sensory overload or under-responsiveness early, preventing distress and improving patient cooperation. By combining professional tools with empathetic observation and family collaboration, nurses can create individualized care plans that honor each patient's sensory needs, fostering comfort, safety, and trust in healthcare settings.

Nursing Interventions and Management Strategies

Nursing care for autistic individuals with sensory sensitivities must always be individualized, guided by a comprehensive assessment of the patient's sensory profile (Dunn, 2014)^[6]. The primary goal is to reduce sensory overload, promote self-regulation, and enhance the patient's participation in daily care activities (Ben-Sasson *et al.*, 2021)^[3]. By understanding each patient's triggers and responses, nurses can create safe, predictable, and comforting environments that foster cooperation and trust (Patel & Shah, 2023)^[17].

The following key nursing interventions summarize strategies to address sensory sensitivities effectively:

1. Environmental Modification

- Create a calm and predictable environment by using dim lighting and reducing background noise from

alarms or equipment.

- Arrange sensory-friendly patient spaces with soft colors and minimal visual distractions.
- Provide sensory tools such as weighted blankets, fidget toys, stress balls, or textured cushions to help patients regulate input.
- Allow personal comfort items like headphones, sunglasses, or familiar toys to reduce anxiety and provide reassurance.

2. Structured Routines

- Maintain consistent schedules for daily care, medication administration, and procedures to enhance predictability.
- Use visual schedules, pictorial aids, or written plans to help patients understand sequences of care activities.
- Avoid sudden changes; when changes are necessary, prepare the patient using gradual explanations or stepwise transitions.

3. Communication Support

- Use short, clear phrases to minimize confusion and overload.
- Combine verbal instructions with visual aids such as picture cards, gestures, or demonstration of actions.
- Allow sufficient time for the patient to process information and respond without rushing.
- Maintain a calm tone and gentle body language to support reassurance and trust.

4. Sensory Modulation Techniques

- Implement sensory diets, which are individualized plans of scheduled sensory activities aimed at maintaining optimal regulation.
- Use evidence-based interventions such as deep-pressure therapy, joint compressions, or brushing techniques under appropriate supervision.
- Allow access to sensory breaks, giving patients the option to retreat to quiet spaces when overstimulated.

5. Family-Centered Collaboration

- Include caregivers in planning and decision-making, as they have detailed knowledge of the patient's triggers and comfort strategies.
- Encourage families to share familiar routines, sensory aids, or calming techniques used at home.
- Provide education to parents and caregivers on how to continue sensory management outside hospital settings.

6. Pharmacological Coordination

- Collaborate with physicians to address sensory-related anxiety or agitation when behavioral interventions are insufficient.
- Monitor medication effects closely to evaluate improvements or side effects in sensory responsiveness and behavior.

The table below summarizes the nursing interventions, their rationale, and expected outcomes.

Table 3: Summary of Nursing Interventions for Sensory Sensitivity Management

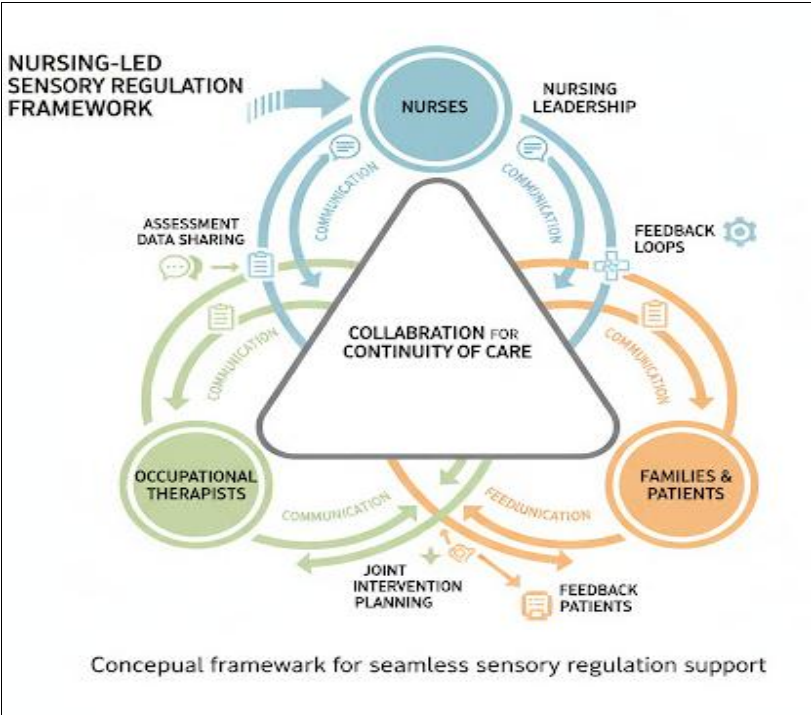
Nursing Strategy	Rationale	Expected Outcome
Modify sensory environment	Reduces overstimulation and prevents sensory overload	Improved patient comfort and cooperation
Use structured routines	Enhances predictability and reduces uncertainty	Lower anxiety and increased participation
Apply sensory modulation techniques	Supports emotional and physiological regulation	Decreased frequency of behavioral outbursts
Family inclusion	Promotes consistency and continuity between home and hospital	Better adaptation and smoother transitions
Education and advocacy	Increases staff awareness and skill in sensory management	Higher quality of care and improved patient outcomes

Nurses play a vital role in implementing these interventions consistently and compassionately. When environments are structured to accommodate sensory needs and routines are predictable, patients experience less distress, improved communication, and greater cooperation during care. Sensory-informed nursing practice not only enhances the well-being of autistic individuals but also strengthens family trust and professional satisfaction among healthcare providers.

Evidence-Based Nursing Practices

Recent research has shown that sensory-based nursing interventions have a direct and measurable impact on improving cooperation and reducing behavioral challenges among autistic patients in hospital settings (Ben-Sasson *et al.*, 2021) [3]. In both pediatric and psychiatric care environments, these approaches have proven effective in decreasing anxiety, minimizing agitation, and enhancing participation during clinical procedures (Harrow & Lloyd, 2020) [8]. Studies reveal that environmental modifications such as dimming lights, controlling noise, and using familiar sensory tools contribute to better regulation of sensory input and greater patient comfort (Robertson & Baron-Cohen,

2017) [19]. One of the most successful approaches identified is the implementation of nurse-led desensitization programs. These programs involve gradual exposure to medical procedures such as venipuncture, vital sign monitoring, or oral examinations while integrating calming sensory elements like deep pressure, music therapy, or visual aids (Lima & Guimarães, 2019) [12]. Patients exposed to these sensory-friendly methods show higher tolerance and reduced physiological stress responses. Moreover, these interventions not only improve the patient’s ability to complete necessary medical procedures but also strengthen the therapeutic bond between nurses, patients, and families (Patel & Shah, 2023) [17]. Collaboration between nursing and occupational therapy teams further enhances the effectiveness of sensory regulation (Marco *et al.*, 2011) [13]. Occupational therapists bring specialized expertise in sensory integration, while nurses ensure consistent implementation of strategies throughout the patient’s hospital stay. This multidisciplinary approach allows for individualized care planning that addresses both physical health needs and sensory comfort (McCormick *et al.*, 2022) [15].



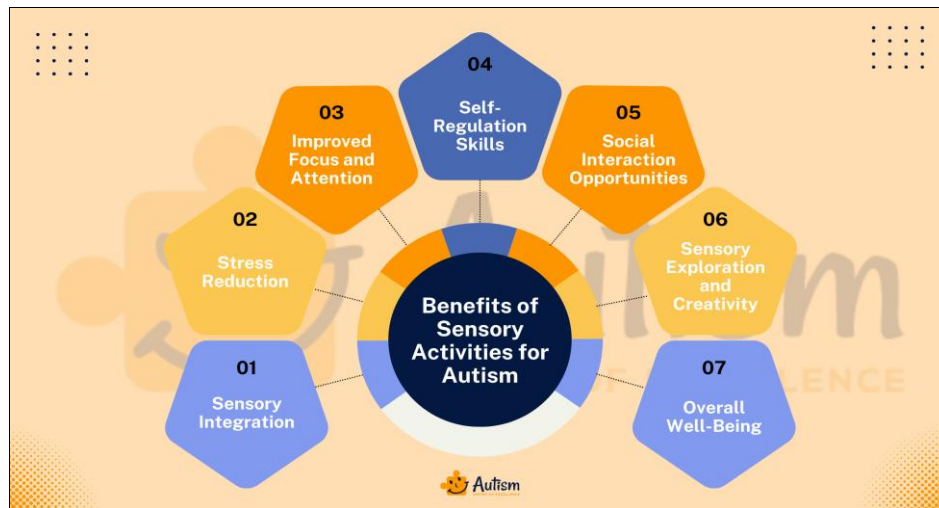
The growing body of evidence supports that sensory-based nursing care not only improves patient comfort but also enhances the overall quality of healthcare delivery. It

represents a shift toward inclusive, patient-centered care where neurodiversity is respected and integrated into professional practice.

Ethical, Legal, and Policy Considerations

Ethical nursing care for autistic individuals requires a deep commitment to upholding autonomy, dignity, and inclusion (Robertson & Baron-Cohen, 2017) ^[19]. Each patient's sensory experience is unique, and their comfort must be prioritized as an ethical component of quality healthcare (Lima & Guimarães, 2019) ^[12]. Nurses have a professional and moral obligation to recognize that managing sensory sensitivities is not a matter of convenience but a matter of rights and respect. Sensory accommodations such as providing quiet spaces, allowing sensory aids, or adjusting

care environments should be viewed as essential healthcare provisions, not optional adjustments (Patel & Shah, 2023) ^[17]. Across many countries, disability-inclusive healthcare laws and human rights frameworks affirm that individuals with neurodevelopmental conditions are entitled to equal access to safe, respectful, and appropriate medical care. Acts such as the Rights of Persons with Disabilities Act (2016) in India and the Americans with Disabilities Act (1990) in the United States legally protect the right to reasonable sensory accommodations in healthcare facilities (World Health Organization, 2023).



These policies mandate that healthcare institutions modify their infrastructure, communication methods, and service delivery to meet the needs of neurodiverse individuals. For nurses, this means practicing in ways that promote fairness, understanding, and sensitivity toward patients who may perceive or respond to the environment differently (Harrow & Lloyd, 2020) ^[8]. Informed consent is another cornerstone of ethical practice. Nurses must ensure that autistic patients, and their caregivers when appropriate, fully understand procedures and interventions before they are performed (Ben-Sasson *et al.*, 2021) ^[3]. This may require the use of visual aids, simplified language, or step-by-step explanations. Rushing through consent or neglecting to ensure comprehension compromises both patient autonomy and trust. When patients exhibit fear or resistance, nurses should employ patience and reassurance rather than coercion, restraint, or forced compliance (McCormick *et al.*, 2022) ^[15]. Communication plays a critical role in ethical sensory care. Many autistic individuals process language differently and may rely on gestures, symbols, or assistive technology to express their needs (Klintwall & Fernell, 2020) ^[10]. Adapting communication styles to align with a patient's strengths honors their individuality and promotes mutual understanding. Maintaining respect during all interactions, allowing additional time for response, and avoiding overstimulation are essential aspects of ethical communication (Dunn, 2014) ^[6].

Role of Nurses in Advocacy and Training

Nurses play a critical dual role as clinicians and advocates in promoting sensory-inclusive healthcare for autistic individuals. Their direct, continuous interaction with patients enables them to identify sensory challenges,

implement practical solutions, and influence systemic changes toward inclusive care. One key responsibility is educating healthcare teams about sensory sensitivities, as many providers may not recognize how sensory stimuli affect behavior, communication, and cooperation during medical procedures. Through workshops, simulations, and in-service training, nurses can enhance staff competence in reducing sensory overload and creating safe, supportive care environments (Dunn, 2014; Lima & Guimarães, 2019) ^[6, 12]. Nurses also contribute to the design of sensory-aware units by collaborating with administrators, architects, and occupational therapists to implement features such as adjustable lighting, acoustic control, neutral color schemes, and dedicated sensory rooms. These modifications reduce distress for patients and create welcoming environments for families (Marco *et al.*, 2011; Patel & Shah, 2023) ^[13, 17]. At the policy level, nurses inform institutional and national guidelines, ensuring sensory inclusion becomes a standard component of healthcare quality and safety protocols (World Health Organization, 2023; Harrow & Lloyd, 2020) ^[8]. Furthermore, nurses extend advocacy to the community, partnering with schools, early intervention centers, and autism support organizations to promote sensory awareness and support continuity of care (Klintwall & Fernell, 2020) ^[10]. Continuous professional education in autism and sensory care equips nurses with the knowledge and confidence to deliver evidence-based, individualized interventions (Ben-Sasson *et al.*, 2021) ^[3]. By combining clinical expertise, empathy, and advocacy, nurses bridge bedside care and systemic change, fostering equitable, dignified, and sensory-sensitive healthcare for autistic individuals.

Future Directions and Research Opportunities

The field of sensory-inclusive nursing care for autistic individuals is rapidly evolving with the introduction of advanced technologies and interdisciplinary innovations (Patel & Shah, 2023) ^[17]. Emerging tools such as wearable sensory monitors, virtual reality desensitization programs, and artificial intelligence (AI)-based sensory tracking systems are opening new possibilities for understanding and managing sensory sensitivities more effectively (Fletcher-Watson & Happé, 2019) ^[7]. These technologies can provide real-time data on physiological stress responses, help predict sensory overload, and offer personalized intervention strategies that align with each patient's sensory profile (Bottino *et al.*, 2021) ^[14]. Wearable sensory monitors, for example, can measure changes in heart rate, skin conductance, and movement patterns to detect early signs of anxiety or overstimulation (Kushki *et al.*, 2019) ^[11]. This allows nurses to intervene before distress escalates, improving patient safety and comfort. Virtual reality (VR) platforms are being used in clinical and educational settings to simulate sensory experiences, helping autistic individuals gradually adapt to new environments or medical procedures (Maskey *et al.*, 2019) ^[14]. Similarly, AI-based sensory tracking systems can analyze behavioral data and recommend individualized interventions, enabling nurses to deliver proactive, evidence-based care (Ben-Sasson *et al.*, 2021) ^[3].

Conclusion

Managing sensory sensitivities in autistic patients requires a comprehensive nursing approach that integrates scientific knowledge with empathy, patience, and creativity. Sensory differences are not merely behavioral challenges but neurological realities that shape how individuals perceive and interact with their environment. Nurses, as the primary caregivers, are uniquely positioned to recognize these needs and respond through thoughtful interventions that promote comfort, safety, and trust. A holistic and empathetic approach begins with individualized assessment, careful observation, and open collaboration with families and multidisciplinary teams. By adapting hospital environments, reducing sensory overload, and using structured routines, nurses can create a sense of predictability that helps patients feel secure. Effective communication whether through visual supports, simplified instructions, or alternative communication tools further strengthens understanding and cooperation between nurses and autistic individuals. The involvement of families and occupational therapists is essential to ensure that care strategies remain consistent and responsive to the patient's sensory profile. Integrating evidence-based sensory modulation techniques, environmental adaptations, and professional training enables nurses to provide care that respects neurodiversity and minimizes distress. Sensory-informed nursing care goes beyond clinical competence; it reflects the values of dignity, inclusion, and human connection. It allows nurses to act not only as caregivers but also as advocates for sensory-friendly environments within healthcare institutions. When hospitals prioritize sensory inclusion, they make healthcare accessible, equitable, and compassionate for autistic individuals and their families.

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Author's Contribution

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Conflict of Interest

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