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Scoping Review

Sensory-Friendly Hospital Policies for Patients with Disabilities: A Scoping Review of Institutional Standards, Implementation, and Gaps

Políticas hospitalarias adaptadas a las necesidades sensoriales para pacientes con discapacidad: una revisión exploratoria de las normas institucionales, la implementación y las brechas existentes

Stephanie Quon https://orcid.org/0000-0001-9188-8380
Katherine Zheng https://orcid.org/0009-0004-7989-711X
Isabel Truong
Leah Moroz

University of British Columbia, Vancouver, Canada

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Correspondence author: Stephanie Quon, stephaniesfquon@gmail.com

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Key contribution of the study

Objective	To map the existing literature on hospital policies and institutional guidance related to sensory-friendly environments for disabled patients, including policy content, implementation strategies, reported outcomes, and persistent barriers
Study design	Scoping review conducted according to the PRISMA-ScR framework
Source of information	MEDLINE, Embase, CINAHL, PsycINFO, and Scopus (from inception to December 2025), supplemented by reference list screening and targeted grey literature searches
Population / sample	Thirty-five included sources describing hospital-based policies, protocols, pathways, standards, quality improvement initiatives, or implementation reports related to sensory-friendly care for disabled patients across pediatric and adult hospitals, emergency departments, imaging suites, perioperative settings, and inpatient wards
Statistical analysis	Descriptive synthesis and thematic analysis. Data were charted using a standardized extraction form and organized into themes; no formal quality appraisal or quantitative meta-analysis was conducted
Statistical analysis	Four themes emerged: (1) policy scope and definitions of sensory-friendly care; (2) standardized accommodation pathways and practical tools; (3) workforce training, role clarity, and accountability mechanisms; and (4) uneven implementation and limited evaluation. Policies commonly included sensory toolkits, quiet spaces, communication supports, and individualized accommodation plans, but few specified measurable standards, monitoring mechanisms, or enforcement structures

Abstract

Background: Sensory barriers in hospitals, such as bright lighting, alarms, crowding, strong odors, unpredictable touch, and long waits, can create distress and reduce access to safe care for disabled patients, including autistic people and individuals with sensory processing differences, intellectual disabilities, acquired brain injury, PTSD, and chronic pain.
Objective: This scoping review aimed to map the existing literature on hospital policies and institutional guidance related to sensory-friendly environments for disabled patients, including policy content, implementation strategies, reported outcomes, and persistent barriers.
Methods: Following the PRISMA-ScR framework, we systematically searched MEDLINE, Embase, CINAHL, PsycINFO, and Scopus from inception to December 2025.
Results: Thirty-five sources were included, spanning pediatric and adult hospitals, emergency departments, imaging suites, perioperative settings, and inpatient wards. Policies most commonly addressed autism and developmental disabilities, though fewer explicitly referenced

broader disability communities. Four themes emerged: (1) policy scope and definitions of "sensory-friendly care," (2) standardized accommodation pathways and tools, (3) workforce training and accountability mechanisms, and (4) uneven implementation and limited evaluation. While many policies described practical accommodations (e.g., quiet rooms, sensory kits, lighting adjustments, communication supports), few specified measurable standards, equity-oriented monitoring, or enforcement structures.
Conclusion: Hospital policies on sensory-friendly environments are emerging but inconsistent in scope, specificity, and accountability. Current guidance emphasizes practical accommodations, yet lacks standardized metrics and implementation infrastructure. Future work should prioritize disability-inclusive policy design, clear minimum standards, staff training tied to clinical workflows, and robust evaluation of patient experience and safety outcomes.
Key words: Autism Spectrum Disorder; Disabled Persons; Health Services Accessibility; Patient-Centered Care; Health Facility Environment; Hospital Design and Construction; Health Policy; Delivery of Health Care; Accessibility

Resumen
Antecedentes: Las barreras sensoriales en hospitales, como iluminación intensa, alarmas, hacinamiento, olores fuertes, contacto físico impredecible y largas esperas, pueden generar malestar, reducir el acceso a una atención segura para pacientes con discapacidad, como autismo, trastornos del procesamiento sensorial, discapacidad intelectual, lesión cerebral adquirida, trastorno de estrés postraumático y dolor crónico.
Objetivo: Mapear la literatura existente sobre políticas hospitalarias y directrices institucionales relacionadas con entornos sensorialmente amigables para pacientes con discapacidad, incluyendo el contenido de las políticas, estrategias de implementación, resultados y barreras persistentes.
Métodos: Siguiendo a PRISMA-ScR, realizamos una búsqueda sistemática en MEDLINE, Embase, CINAHL, PsycINFO y Scopus desde su inicio hasta diciembre de 2025.
Resultados: Se incluyeron 35 fuentes, que abarcan hospitales pediátricos y de adultos, servicios de urgencias, salas de diagnóstico por imagen, entornos perioperatorios y salas de hospitalización. Las políticas abordaban principalmente autismo y discapacidades del desarrollo; pocas hacían referencia explícita a las comunidades de personas con discapacidad en general. Surgieron cuatro temas: (1) alcance de las políticas y definiciones de "atención sensorialmente amigable", (2) vías y herramientas estandarizadas para la adaptación, (3) capacitación del personal y mecanismos de rendición de cuentas, y (4) implementación desigual y evaluación limitada. Si bien muchas políticas describían adaptaciones prácticas (p. ej., salas silenciosas, kits sensoriales, ajustes de iluminación, apoyos para la comunicación), pocas especificaban estándares medibles, monitoreo orientado a la equidad o estructuras de cumplimiento.
Conclusión: Las políticas hospitalarias sobre entornos sensorialmente amigables están surgiendo, pero son inconsistentes en alcance, especificidad y rendición de cuentas. La guía actual enfatiza las adaptaciones prácticas, pero carece de métricas estandarizadas e infraestructura de implementación. El trabajo futuro debería priorizar el diseño de políticas inclusivas para personas con discapacidad, estándares mínimos claros, capacitación del personal vinculada a los flujos de trabajo clínicos y una evaluación rigurosa de la experiencia del paciente y los resultados de seguridad.
Palabras clave: Trastorno del espectro autista; Personas con discapacidad; Accesibilidad a los servicios de salud; Atención centrada en el paciente; Entorno de los centros de salud; Diseño y construcción de hospitales; Política sanitaria; Prestación de servicios de salud; Accesibilidad

Introduction

Hospitals are designed to prioritize efficiency, throughput, and standardized workflows within physically constrained environments, often emphasizing rapid assessment, constant monitoring, and high levels of activity (1). While these priorities are essential for acute care delivery, they frequently generate sensory conditions that are distressing or inaccessible for many disabled patients, including autistic individuals, people with sensory processing differences, intellectual and developmental disabilities, traumatic brain injury, post-traumatic stress disorder, dementia, and chronic pain conditions (2,3).

Common environmental stressors include harsh or non-adjustable lighting, unpredictable auditory stimuli such as alarms and overhead paging, crowding, repeated interruptions, strong chemical odors, and limited privacy (1,4). Pediatric guidance highlights that these features are especially pronounced in emergency and inpatient settings, where heightened sensory stimulation can escalate distress and complicate evaluation and management for children and youth with neurodevelopmental differences (5,6).

Empirical and design-focused literature increasingly demonstrates that sensory environments shape patients' emotional regulation, anxiety, and engagement with care, particularly for autistic individuals and others with sensory sensitivities (2,3). Unpredictable noise exposure, lack of control over environmental stimuli, and absence of low-stimulation spaces have been associated with heightened stress and discomfort across patient populations (1,4). Inclusive design scholarship emphasizes adaptable lighting, sound attenuation, calming visual environments, and access to quiet or retreat spaces as strategies that can accommodate diverse sensory needs while improving overall patient experience (7,8). Importantly, these approaches align with universal design principles, suggesting that sensory-considerate environments benefit a broad range of patients rather than serving only those with identified disabilities (3,7).

Sensory distress in healthcare settings is not merely a matter of comfort but constitutes a clinically significant barrier to equitable care (9). Sensory overload can impair patients' ability to communicate symptoms, participate in examinations, tolerate investigations, and provide informed consent, particularly for individuals with neurodevelopmental disorders or brain injury (10,11). In acute care contexts, heightened sensory distress has been linked to behavioral escalation, premature departure from care, and increased use of coercive practices such as physical restraint or seclusion (12). These outcomes disproportionately affect disabled and minoritized populations and contribute to both psychological and physical harm (13). Sensory distress also compounds existing barriers such as stigma, diagnostic overshadowing, and inadequate accommodation practices, reinforcing inequities in diagnosis, treatment, and outcomes (14,15).

In response to these challenges, "sensory-friendly" initiatives have gained traction across pediatric and adult hospital settings as a pragmatic, equity-oriented strategy to reduce distress and improve accessibility (2). These initiatives include sensory toolkits (e.g., noise-cancelling headphones, weighted blankets, fidget tools), environmental modifications (e.g., dimmable lighting, noise reduction), workflow adaptations (e.g., predictable communication, reduced waiting), designated quiet rooms, and individualized sensory profiles or accommodation plans (5,8). Intervention studies suggest that sensory kits and sensory modulation rooms are feasible and acceptable in settings such as emergency departments and inpatient psychiatry, with reported benefits for de-escalation and patient experience (16,17). However, systematic reviews of sensory-based interventions highlight substantial heterogeneity in components, outcome measures, and implementation approaches, underscoring the need for clearer guidance on standardization and integration into routine care (7,8).

Despite growing interest in sensory-friendly care, evidence suggests that hospitals rarely formalize these practices through written policies or standardized institutional protocols (18). Surveys and reviews indicate that most hospitals lack structured care pathways, consistent staff training, and clear accountability mechanisms for sensory accommodations, particularly for patients with autism spectrum disorder and intellectual disabilities (18,19). When policy elements exist, they are often fragmented, variably implemented, and infrequently evaluated for impact on patient outcomes or equity of access (18,19). Professional guidance from pediatric and emergency medicine organizations emphasizes sensory-sensitive care but stops short of mandating institutional policy development or standardized accountability structures (6,20). As a result, implementation frequently depends on local champions rather than embedded organizational systems, contributing to inconsistent access and avoidable inequities.

Accordingly, this scoping review aims to map the existing literature on hospital policies and institutional guidance related to sensory-friendly environments for disabled patients. The review describes policy content, healthcare settings, targeted populations, implementation strategies, and reported outcomes, while identifying gaps in evaluation and standardization. By synthesizing how sensory-friendly care is currently conceptualized and operationalized at the policy level, this review seeks to inform future institutional frameworks that translate emerging evidence and professional recommendations into equitable, measurable, and sustainable practice.

Materials and methods

Protocol and reporting

This scoping review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (21). An a priori protocol outlining the review objectives, eligibility criteria, data sources, and synthesis methods was developed to enhance transparency, reproducibility, and consistency in study selection and data extraction. Consistent with scoping review methodology, the purpose of the review was to map the scope, content, and implementation features of hospital-based sensory accessibility policies rather than to assess policy effectiveness or conduct formal quality appraisal.

Search strategy

We searched MEDLINE (via Ovid), Embase, CINAHL, PsycINFO, and Scopus from database inception to December 2025. Search strategies combined controlled vocabulary and free-text terms across four domains: (1) hospitals and clinical settings (including emergency departments, inpatient wards, perioperative settings, and diagnostic imaging); (2) sensory environment concepts (e.g., sensory-friendly design, noise, lighting, sensory overload); (3) disability-related terms (including autism, neurodiversity, intellectual disability, and sensory processing differences); and (4) policy and protocol terminology (e.g., policy, guideline, pathway, toolkit, standard operating procedure). Search strategies were adapted for each database to capture literature across health services research, nursing, rehabilitation, disability studies, and quality improvement. Reference lists of included sources were screened to identify additional relevant materials, and targeted grey literature searches were conducted to capture institutional guidance documents, policy reports, and implementation descriptions not indexed in academic databases.

Eligibility criteria

Sources were eligible for inclusion if they: (1) described hospital-based policies, protocols, pathways, or institutional standards explicitly aimed at reducing sensory barriers in care environments; and (2) focused on disabled patients or populations with sensory accessibility needs. Eligible sources included empirical studies, quality improvement initiatives, implementation reports, and policy evaluations using qualitative, quantitative, or mixed-methods approaches. Sources were excluded if they consisted solely of commentary without policy description, focused on non-hospital settings such as outpatient-only clinics, or did not address sensory accessibility as a defined policy or protocol objective.

Selection process

Two reviewers independently screened titles and abstracts, followed by full-text review of potentially eligible sources using predefined inclusion and exclusion criteria. This dual-reviewer process was employed to enhance consistency and reduce selection bias. Disagreements were resolved through discussion and consensus, with a third reviewer adjudicating unresolved cases when necessary. Reasons for exclusion at the full-text stage were documented to support transparency in study selection.

Data charting and synthesis

Data were extracted using a standardized charting form capturing care setting, patient population, policy or protocol components, implementation supports (such as staff training, designated champions, or audit mechanisms), outcomes measured, and reported barriers and facilitators to implementation. The charting framework was piloted and refined iteratively as new policy features and implementation strategies emerged. Findings were summarized descriptively and organized into themes to identify cross-cutting patterns in how hospitals conceptualize, operationalize, and sustain sensory accessibility initiatives, rather than to compare institutions or rank policy effectiveness.

Consistent with scoping review methodology, we did not conduct formal critical appraisal, as the objective was to map the breadth, characteristics, and implementation features of available literature rather than determine intervention effectiveness.

Results

Study selection and characteristics

A total of 2,402 unique records were identified through database searching, of which 88 full-text sources were assessed for eligibility, and 35 were included in the final synthesis. Across settings, the literature consistently framed sensory conditions, particularly noise, bright lighting, crowding, and unpredictable interruptions, as clinically meaningful barriers that can escalate distress and disrupt care processes for neurodivergent and disabled patients. Four overarching themes were identified: (1) policy scope and definitions, (2) standardized accommodation pathways and tools, (3) workforce training and accountability, and (4) uneven implementation and limited evaluation.

Theme 1: Policy scope and definitions of "sensory-friendly care"

Policies varied widely in how they defined "sensory-friendly care," ranging from broad commitments to accessibility and inclusion to highly specific operational standards such as noise-reduction expectations, lighting adjustments, or designated low-stimulation spaces (7,8). Most sources were anchored in autism and developmental disability contexts, commonly framing sensory overload as a driver of distress-related

behaviors, communication breakdown, and care disruption, particularly in high-stimulation environments like emergency departments (5,20,22). In contrast, fewer policies explicitly positioned sensory needs as a cross-disability accessibility issue relevant to patients with a wide range of impairments and conditions, despite evidence that sensory distress can meaningfully limit care participation and informed consent across neurodevelopmental and neurological populations (9-11,14). Many policies used flexible, individualized language (e.g., "reasonable accommodations," "person-centred supports") but did not specify minimum baseline standards that should be routinely available, which the disability-access literature cautions can shift responsibility from system design to individual staff discretion and thereby generate inconsistent access across units and shifts (14,23). Few sources explicitly connected sensory-friendly care to disability rights, nondiscrimination obligations, or human rights frameworks, even though a rights-based approach is frequently described as foundational to equitable healthcare access and to institutional accountability for accommodations (24,25).

Theme 2: Standardized accommodation pathways and practical tools

Most sources included concrete tools or standardized pathways intended to operationalize accommodations within real clinical workflows rather than relying on ad hoc responses (17,20). Sensory toolkits were among the most common components and typically included items such as noise-cancelling headphones, sunglasses, fidget tools, weighted items, and visual timers, reflecting a broader trend toward low-cost, deployable supports for self-regulation and distress reduction in acute care settings (17,26). Quiet spaces and designated low-stimulation rooms were frequently described as core environmental supports, aligning with pediatric emergency guidance that recommends reducing stimulation through quieter/private spaces and limiting unnecessary personnel in the room to prevent escalation and facilitate assessment (5,20). Many policies incorporated pre-visit planning mechanisms, such as sensory profiles, "about me" forms, and individualized coping plans, to enable anticipatory accommodation planning and reduce uncertainty during encounters, particularly for patients with neurodevelopmental and communication differences (27,28). Communication supports were also central, including visual schedules, plain-language scripts, augmentative and alternative communication (AAC) awareness, and predictability checklists, reflecting evidence that communication accommodations are often the most actionable and consistently implemented disability supports when embedded into routine care processes (23,28,29). Imaging and perioperative policies frequently emphasized preparation scripts, desensitization strategies, and environmental control (e.g., modifying lighting and sound, minimizing staff transitions) to reduce distress and incomplete procedures, mirroring broader perioperative literature demonstrating that structured pathways and multimodal preparation can improve procedural success and patient experience (26,30-32).

Theme 3: Workforce training, role clarity, and accountability mechanisms

A consistent distinction across sources was between policies functioning primarily as resource lists and those embedded into clinical systems through workforce training, role clarity, and accountability infrastructure (33,34). Policies with stronger implementation scaffolding commonly included required staff education (e.g., onboarding modules, simulation-based training, and unit refreshers), reflecting evidence that staff confidence and skill in disability accommodations are critical determinants of whether sensory supports are offered consistently, especially in high-turnover and high-acuity environments (34-37). Role clarity was repeatedly emphasized, including specifying who offers sensory supports, who documents accommodation needs, and who escalates barriers, which aligns with implementation science findings that diffusion of responsibility contributes to inconsistent delivery of accommodations (18,34). Multiple sources emphasized documentation pathways within the electronic health record (EHR), such as flags, accommodation orders, and care plans, as a mechanism to support continuity across shifts and reduce repeated disclosure burdens, consistent with qualitative work showing that accommodations are more reliably delivered when embedded in visible and standardized documentation workflows (38,39). Where policies lacked training, role clarity, and EHR integration, sensory accommodations were more likely to depend on individual clinician goodwill, producing uneven access within and across hospitals, which parallels broader disability-access literature on variability when accommodations are not systematized (14,25).

Theme 4: Uneven implementation and limited evaluation

Only a minority of sources reported systematic evaluation beyond satisfaction surveys, descriptive reporting, or anecdotal implementation accounts, and quantitative outcomes, when reported, were heterogeneous in definition and measurement (40,41). Across evaluated sources, outcomes most commonly included patient and family experience, procedure completion (especially in imaging contexts), distress escalation events, and reported changes in restraint or sedation use, although attribution to specific policy components was frequently unclear (42-44). This measurement variability aligned with methodological critiques in the restraint and restrictive-practice literature, which note inconsistent reporting standards

and limited psychometric validation of instruments used to assess experience and safety outcomes, constraining comparability and confidence in observed effects (40,44). Reported implementation barriers included limited availability of quiet spaces, challenges maintaining and replenishing sensory supplies, staff time constraints, skepticism about feasibility in high-acuity areas, and perceived conflicts with infection control or safety procedures when these trade-offs were not proactively addressed in policy design (45,46). Several sources highlighted that without measurement infrastructure, such as audit mechanisms, adherence indicators, and standardized definitions, policies risk becoming symbolic rather than operational, echoing broader guidance emphasizing that systematic monitoring and feedback loops are necessary for reducing coercive practices and achieving reliable implementation (41). Overall, the literature suggested that scaling sensory-friendly care requires not only practical tools and environmental modifications, but also institutional investment in evaluation capacity to assess effectiveness, equity impacts, and sustainability over time (18,44).

Discussion

This scoping review demonstrates that hospital policies addressing sensory-friendly environments for disabled patients are emerging across multiple care settings, most notably in pediatrics, emergency departments, and imaging services. Across sources, policies consistently framed sensory overload as a clinically relevant contributor to distress, communication breakdown, and disrupted care processes, rather than as a matter of patient comfort alone. This framing aligns with professional guidance from the American Academy of Pediatrics and the American College of Emergency Physicians, which explicitly positions sensory accommodations, such as quiet spaces, noise-reduction strategies, and environmental modifications, as integral to patient safety, family-centered care, and effective clinical assessment in high-acuity settings (4,20). Together, these findings suggest a growing recognition that sensory accessibility constitutes a legitimate determinant of care quality and safety within hospital environments.

The policies identified in this review largely emphasized practical, low-cost accommodations, including sensory toolkits, designated quiet areas, communication supports, and predictable workflows. This emphasis is consistent with qualitative and mixed-methods research showing that disabled patients and caregivers value environmental adaptations and clear communication, and that many effective sensory accommodations require relatively modest financial investment but significant organizational commitment (14). The focus on pragmatic tools mirrors prior work in healthcare design and disability studies that highlights the role of environmental factors, such as noise, lighting, and spatial organization, in shaping stress, autonomy, and psychological safety during care encounters (8,47). Importantly, these approaches reinforce the shift away from viewing sensory supports as optional or individualized favors toward recognizing them as routine components of accessible, high-quality care.

Despite this progress, the literature revealed substantial variability in policy scope, specificity, and accountability. Many policies relied on broad person-centred language without defining minimum environmental standards or measurable implementation expectations, which limits their ability to produce consistent practice change. Prior research similarly demonstrates that sensory accessibility policies in healthcare and public environments are often under-specified, leading to accommodations being applied unevenly and contingent on staff knowledge, local resources, or informal workarounds (18,47). This variability risks reproducing inequities, whereby patients in well-resourced units or those encountering informed staff receive meaningful accommodations while others do not, undermining the principle of equitable access to care.

A further concern highlighted by this review is the narrow diagnostic focus of many policies, which center predominantly on autism spectrum disorder. While ASD-focused initiatives have advanced awareness and accommodations for some patients, this emphasis risks excluding individuals with other sensory processing differences, including those with intellectual disabilities, ADHD, sensory processing disorder, and visual or hearing impairments (47-49). This diagnostic narrowing may inadvertently reinforce the framing of sensory distress as a behavioral problem rather than as an accessibility mismatch between the person and the healthcare environment, a conceptual shift increasingly emphasized in disability scholarship and health equity research (50,51). Consistent with universal design principles, the broader literature underscores that inclusive sensory environments benefit a wide range of users, including older adults, caregivers, and acutely ill patients, suggesting that diagnosis-specific approaches may unnecessarily limit policy impact (8,14,52).

Another key finding of this review is that policies were most likely to be actionable when accompanied by implementation infrastructure, including workforce training, role clarity, electronic health record documentation pathways, and audit mechanisms. This observation aligns closely with implementation science literature and guidance from the Agency for Healthcare Research and Quality, which emphasizes

that patient-centered initiatives require explicit implementation plans, adequate resourcing, staff engagement, and mechanisms for accountability to achieve sustained change (53). Systematic reviews further confirm that structured training, local support tools, and clear role delineation are among the most consistent enablers of implementation, while their absence leads initiatives to be perceived as discretionary rather than institutional standards (54,55). These findings reinforce that sensory-friendly care cannot be operationalized through policy statements alone but must be embedded within routine clinical systems to ensure reliability and equity.

This scoping review provides a comprehensive synthesis of emerging hospital policies and institutional guidance on sensory-friendly environments across diverse clinical settings, highlighting common policy components and persistent implementation gaps. However, several limitations warrant consideration. First, most included sources originated from high-income countries, limiting generalizability to lower-resource health systems. Second, relatively few studies evaluated policy effectiveness using validated outcome measures, and long-term sustainability, equity impacts, and safety endpoints were rarely assessed. Future research should prioritize rigorous evaluation of sensory-friendly policies, examining outcomes such as delays in care, incomplete procedures, restraint and sedation use, patient avoidance of healthcare, and differential effects across disability groups and care settings. In addition, participatory policy development that meaningfully involves disabled individuals and communities is needed to move beyond diagnosis-specific approaches and ensure that sensory accessibility is embedded as a core component of healthcare quality and equity (14,47,50).

Conclusion

Hospital policies supporting sensory-friendly environments for disabled patients are increasingly described in the literature but remain inconsistently designed and weakly evaluated. Existing policies emphasize practical accommodation and individualized supports, reflecting growing recognition of sensory accessibility as a determinant of safety and care quality. However, the absence of standardized definitions, minimum accessibility standards, workforce training requirements, and accountability mechanisms limit equitable implementation. Advancing sensory-friendly care will require disability-inclusive policy development, integration into routine clinical workflows, and robust evaluation frameworks capable of assessing both patient experience and safety-related outcomes across healthcare settings.

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