

Sleep, Sensory Integration and Processing, and Autism: A Scoping Review

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PURPOSE: The purpose of this scoping review is to investigate and synthesize the literature on the relationship between sleep challenges and sensory integration/processing in autistic individuals.

BACKGROUND: Sleep is an occupation that is crucial to optimal health and wellness for all individuals. Sleep disorders can be found in 20-40% of the general population. In autistic populations, however, the prevalence of sleep dysfunction is considerably higher, with 40-80% of individuals presenting a range of sleep disorders. The basis of sleep disorders in autism is multifactorial, but sensory integration/processing concerns may play a role. Research that investigates the relationship between sensory integration challenges in sleep for autistic individuals is vital. This scoping review considered articles that focused on this relationship either directly or indirectly.

METHOD: We followed the PRISMA extension for scoping reviews and the guidelines provided by Arksey and O'Malley (2005) and Levac (2010) to answer the following research question: What is the relationship between sleep and sensory integration/processing challenges in autistic individuals across the agespan? Searches were conducted in six databases and included all citations from the inception of each database through June 2021. Key terms addressed autism sleep and sleep disorders, and sensory processing and/or integration disorder. Included articles were in English or Spanish using any research design. They needed to purposefully include consideration of sensory factors, focus on sleep, and primarily address an autistic population. A review of located papers was conducted by two reviewers; conflicts were resolved by a third reviewer or through discussion. The search strategy identified 397 documents. Of these, 371 articles did not meet inclusion criteria. Two additional articles were identified and included following a manual search of included articles.

RESULTS: All studies but one addressed children. The majority of studies characterized sleep and sensory integration/processing differences in autism. Relative to sleep, investigators found multiple sleep concerns such as bedtime resistance, sleep anxiety, delayed sleep onset, night awaking, and short sleep duration. Sensory concerns focused on reactivity, finding over- and under-reactivity as well as sensory seeking across sensory domains; over-reactivity was also commonly linked to anxiety. Common themes in sleep intervention are consideration of the sensory features of the sleep environment, including light, sound, textures. A smaller group of studies examined sensory-based rather than sensory integration interventions, including weighted blankets, auditory and vibratory mattresses, swimming, yoga, and qigong massage. Swimming and qigong showed promise. No studies were of high quality.

CONCLUSION: At minimum, there exists a relationship between sensory integration/processing, sleep, and autism, although research is limited. The sensory environment appears important in supporting sleep. All aspects of sensory reactivity differences in autistic children can be linked to many features of poor sleep. Current literature is insufficient to allow for greater specificity on these relations. Little research addressed these relations in autistic adults. Interventions that have a central sensory component may have efficacy in improving sleep for some children, however, studies with greater rigor and purposeful use of sensation are needed.

IMPACT STATEMENT: Understanding the link between sensory integration/processing differences and sleep challenges is important for practitioners, families, and autistic individuals as it may provide insight into additional intervention considerations.

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