People with autistic spectrum conditions may have different sensory experiences from others, and small environmental modifications can improve their care.

Environments and autistic spectrum conditions

In this article...

- The sensory differences of people with autistic spectrum conditions
- How healthcare settings can overload the senses
- Steps you can take to reduce service users’ distress

Keywords: Autistic spectrum conditions/Autism/Asperger’s syndrome/Sensory differences/Ward environment

This article has been double-blind peer reviewed

Many people with autistic spectrum conditions (ASC) have difficulty in managing sensory experiences (Attwood, 1998), which can make hospitals and other care settings extremely distressing. Professionals working in these settings can make them feel safer and more comfortable for people with ASC by understanding individual needs and paying attention to the sensory impact of these environments and how negative effects can be minimised.

Nguyen (2006) made recommendations on how to make environments and surroundings friendly to people with autism, considering a number of areas where sensory stimulus and safety may be in conflict. All senses are involved – from sight, hearing, smell, taste and touch to the sense of balance (vestibular system) and of body position awareness (proprioception). The impact of sensory overload may lead to associated problems. Attwood (2007) referred to the way in which people with Asperger’s syndrome may avoid situations and even become phobic if the sensory experience is too intense, and uses the example of developing a fear of dogs or agoraphobia if the anticipation of dogs barking is too much to bear.

Nurses have a key role in ensuring attention is paid to the sensory impact of the environment and procedures that people with ASC may encounter in healthcare settings.

Impact on the senses

Sight
People with ASC can be sensitive to colour, brightness, size, reflection and patterns and may report pain when in contact with the visual stimulus that affects them. They see the flickering of fluorescent lighting as if magnified and therefore experience significant sensory overload (Murray, 2006; Sainsbury, 2000), while patterns and details present a challenge to some individuals, who look at the detail rather than the whole.

Sound
Sounds may be magnified or invasive, taking over all thoughts and affecting concentration. Some people with ASC can hear very distant sounds, such as an approaching train, long before others hear it.

Sounds tolerated or barely noticed by others may be unbearable and even painful, to the extent that people with ASC may be unable to process what someone in front of them is saying (Cascio et al, 2008).
Cascio et al (2008) also described hypo- and hypersensitivity and the way individuals may experience both at the same time. For example, they may be hypersensitive to soft materials and hyposensitive to sound – maybe failing to respond to their name being called, even though it is understood.

About 70-85% of children with Asperger’s experience sensitivity to sounds; Attwood (2007) lists those sounds that most frequently cause distress in the following categories:

- **Sudden, unexpected noises.** In hospitals or residential units, these might be telephones ringing, alarms sounding, doors banging, service users shouting or heels on hard floors.

- **High-pitched continuous sounds,** such as sounds from fluorescent lighting or fridges.

- **Confusing and complex sounds,** such as those found in crowded places.

This would be experienced in communal areas, particularly when staff come and go and talk to each other.

Understanding the triggers for specific individuals is important if we are to identify the cause of distress and find ways to address it (Attwood, 1991).

Grandin (2000), who has a diagnosis of autism, described her difficulty in focusing on a conversation if there was any background noise, and her inability to control the experience of incoming auditory information. As a child this resulted in her moving in a stereotypical “autistic” manner as a way of shutting out painful sounds.

On the other hand, a specific sound may be soothing, pleasant or fascinating and absorb individuals for some time. This might be running water, clicking or other predictable, repetitious sounds that are less threatening and frightening than those that are unpredictable and difficult to control, such as telephones ringing, babies crying or fire alarms.

**Touch**

People with ASC may have a different experience of touch from others, finding tactile experience overwhelming.

Tactile sensitivity creates additional challenges for people with ASC and those providing care and support. A handshake, clothes not being of an acceptable material, being accidentally touched in a crowd, or even having a haircut may cause considerable distress.

Grandin (1988) described how she was perceived as behaving badly when she was in fact extremely distressed as a result of sensory stimuli. Haircuts can present particular challenges. Not only might it hurt when the hair is tugged, but there is the added problem of someone else being in close proximity and touching, and the noise of the scissors, which produce a sudden sharp sound, very close to the ears. Deep touch pressure has been shown to calm people who are anxious where other methods have failed (Blairs et al, 2007; Grandin, 1992).

**Taste and smell**

Sensitivity to taste and smell is common. The experience of texture changing in the mouth is often accompanied by the need to touch the food with fingers, and to have foods that are not mixed with any others (with no sauces, and items separated on the plate). Serving different foods at the same time in the same place may overwhelm the olfactory sense of some people with ASC.

Encouraging those affected by loud sounds to eat noisy foods such as raw vegetables or salads may just add to the challenges and distress.

**Body position**

The proprioception system is responsible for us having a subconscious awareness of the position of our body, allowing us to adjust ourselves to sit on a chair easily or walk through a door successfully (Hatch, 1995). Children with autism frequently show signs of proprioceptive dysfunction, which may result in problems with dressing, moving around in a space or general clumsiness.

**Balance**

The vestibular system helps us to balance, for example by telling us whether our head is tilted or straight. Impairment of this system is associated with challenges in maintaining balance and posture, sitting at a desk, or being aware of the speed and direction one is moving in.

**Sensory integration and the environment**

As well as experiencing sensory challenges, people with ASC may find it difficult to process the information received through their senses. Sensory integration theory, as outlined by Bundy et al (2002), describes how sensory intake is processed to result in behaviour. Those who are unable to process sensation from movement or their surroundings are likely to have difficulty producing acceptable actions, which will in turn affect their behaviour and ability to learn.

Multi-sensory stimulation is one approach used to develop sensory integration. However, in people with ASC, it should be carried out in the knowledge that overstimulation of the senses can cause distress. A strategy of reducing sensory input may help to avoid overload (Bogdashina, 2003).

Bogdashina (2003) recommended improving the environment, based on an assessment of individual needs. Many people with ASC experience fragmented perception, whereby they see the parts of objects or people rather than an integrated whole, and therefore notice minute changes in their environment. This sense fragmentation may relate to individuals themselves, as well as external objects. So, they may perceive one part of the body more significantly than another, not having a sense of being a whole person.

Modifications to the environment can help people with ASC greatly. Low arousal and a well-structured environment is important, making use of the principles of TEACCH (Treatment and Education of Autistic and Communication-handicapped Children) and SPELL (Structure, Positive, Empathy, Low arousal and Links) to support communication and a consistent approach (Nguyen, 2009). Bogdashina (2003) said that it is often small inconsistencies and changes that cause the greatest concern and should therefore be explored fully.

TEACCH and SPELL are often used in conjunction and are based on similar core beliefs. TEACCH is described as a “broadly based intervention strategy building on existing skills and interests” (tinyurl.com/TEACCH-programme). The major priorities of TEACCH include understanding autism while focusing on the person then adopting appropriate adaptations. People with autism are seen as a distinct group who share common characteristics and are not viewed as inferior to those of non-autistic people.

SPELL is a framework to reduce the effects of autism through recognising the impact of the environment, communication and approaches on people with autism. There is emphasis on approaching people in a way that builds on existing strengths and sees the world from their experience.

**The role of the nurse**

Nurses are in a key position to ensure the environment on a ward or unit is comfortable for all patients. Where patients with ASC are concerned, this involves getting to know them and developing clear, effective, person-centred support plans.

Understanding the mental and physical...
manifestations of ASC is crucial, with particular consideration being paid to the sensory experience. Awareness of how individual patients respond to the lighting used, the experience of being touched and the smells and sounds on a busy unit is the first step to making the necessary changes to support them. Examples are outlined in Box 1.

As well as considering individual needs, it is essential to ensure nursing staff receive training and education to enable them to understand or at least accept the challenges of sensory experiences for service users with ASC.

With nurse understanding and commitment, changes can be made and maintained. For example, changes to lighting and noise levels (by silencing alarms promptly, turning the TV off and closing doors quietly) are easily achieved with the participation and motivation of staff.

The nurse in charge should act as a champion to encourage motivation and commitment from all staff to any changes. Utilising the strengths of the staff team is crucial to improving practice (Belbin, 2010). It is not always possible to adapt the environment fully, but the experience of other people’s music made him feel sick and have “funny feelings in my stomach”. The role of the nursing staff was to record their observations, and to work with other members of the multidisciplinary team to develop strategies for Mr Brown and to ensure these were followed throughout the day.

The nursing staff were also required to pre-empt situations whereby he might come into conflict with another service user who did not like to be touched.

Auditory stimuli
Anuj Shah, aged 19, was distressed by the sound of keys turning and the click of mobile phones, which he described as a “loud bang”. He said the sound was like a sharp piercing that obscured his vision and made him feel nauseous. Nurses needed to be aware of the noise they made shutting doors, sounds from their shoes and the level and pitch of their voices. “All names have been changed

Box 1. Examples of user experience and nurses’ actions

Personal environment
Mary Green was 27. From the age of 14 years, she had worn a helmet in response to her repeated head banging on objects and carers alike. She also self-harmed (scratching, hair pulling) and would assault staff, biting and kicking them.

Following a sensory assessment by the multidisciplinary team, a programme of desensitisation was introduced. Miss Green was introduced to woollen hats and caps, which were fairly tight fitting to give a sense of pressure. She was also introduced to regular head massage. The cap or hat was worn instead of the helmet for short periods, starting with two minutes, and gradually building up until after six months she no longer wore the helmet and would spend time with nothing on her head. Regular massage continued.

Nursing staff were trained to carry out the massage and to use tactile equipment in a planned and knowledgeable way. This intervention reflects the findings of McClure and Holtz-Yotz (1991) who reported that self-injurious behaviour and self-stimulation was reduced in some children with autism when deep pressure was applied by using foam-padded helmets. Miss Green also wore tight, soft clothing, which appeared to have a settling effect. Night time was identified as particularly difficult, as Miss Green would become restless and behave unpredictably. Nursing staff were encouraged to observe for triggers and to record any significant changes, however small. As a result of their observations, a weighted duvet was used to apply pressure and a firmer tactile experience – it worked very quickly. Miss Green slept through the night and, when she woke, did not appear distressed or alarmed.

Nursing staff were key to the success of Miss Green’s programme, as they had to ensure it was followed and to record and report any changes. The challenge was to ensure all staff followed the plan, as consistency is essential.

Other service users
John Brown was 24 and extremely tactile. He was of average intelligence and, while able to see the impact he was having on others, was unable to manage his behaviour.

He also said the noise of other people’s music made him feel sick and have “funny feelings in my stomach”. The role of the nursing staff was to record their observations, and to work with other members of the multidisciplinary team to develop strategies for Mr Brown and to ensure these were followed throughout the day.

The nursing staff were also required to pre-empt situations whereby he might come into conflict with another service user who did not like to be touched.

Auditory stimuli
Anuj Shah, aged 19, was distressed by the sound of keys turning and the click of mobile phones, which he described as a “loud bang”. He said the sound was like a sharp piercing that obscured his vision and made him feel nauseous. Nurses needed to be aware of the noise they made shutting doors, sounds from their shoes and the level and pitch of their voices. “All names have been changed

References

Nursing Times subscribers can now enjoy unlimited FREE access to learning units, each worth £10+VAT!

Convenient and enjoyable
Over 30 units to choose from and new ones added monthly
Each provides at least 2 hours’ CPD to count towards your PREP requirement

www.nursingtimes.net / Vol 108 No 49 / Nursing Times 04.12.12 25