Weighted blankets…. how can they help?

by Gemma Cartwright

In 1992, Temple Grandin discussed the calming effects of deep touch pressure, and following on from this in 1999, a study investigated the effects of deep pressure on arousal and anxiety reduction by using Grandin's Hug Machine (Edelson et al. 1999). The findings of this study supported Ayres' (1979) original hypothesis that deep pressure may have a calming effect for persons with Autistic Spectrum Disorder (ASD) especially those with high levels of arousal or anxiety. Weighted blankets are being increasingly used in acute mental health care settings and have been found to provide feelings of safety, relaxation and comfort (Mullen,Champagne & Krishnamurthy, 2008). However, a recent Randomised Control Trial (Gringras et al. 2014) has concluded that the use of weighted blankets within the study did not help children with ASD to sleep for a longer period of time, fall asleep significantly faster or wake less often. Interestingly the blankets were favoured by the parents and children, possibly suggesting there were some positive effects from their use.

Coventry's Children and Young People's Occupational Therapy (OT) service are fortunate to be able to provide weighted blankets to support children identified with challenges in their sensory integration and sleep patterns. All children provided with a blanket are assessed using a standardised measure such as the Sensory Processing Measure (Parham, 2007) or the Sensory Profile/Short Sensory Profile (Dunn, 1999). An interview is also completed with the child and their caregiver/ parents regarding their sleep patterns. Weighted blankets are recommended if a child is presenting with difficulties in getting to sleep and/or staying asleep and have particular challenges in their sensory integration.

The particular sensory challenges are those proposed to be linked with sleep difficulties. Research studies have suggested Sensory Over Responsivity and the associated increase in arousal levels influence a child's ability to self-regulate therefore influencing their sleep (DeGangi, 2000). Studies have also found tactile hypersensitivity to be a predictor of global sleep scores indicative of sleep disorders (Shochat, Tzischinsky & Engel-Yeger, 2009) and hypersensitivities in multiple sensory modalities have been correlated with particular sleep patterns (Shani-Adir et al. 2009). Wengel, Hanlon-Dearmand and Fjeldsted (2011) found significant

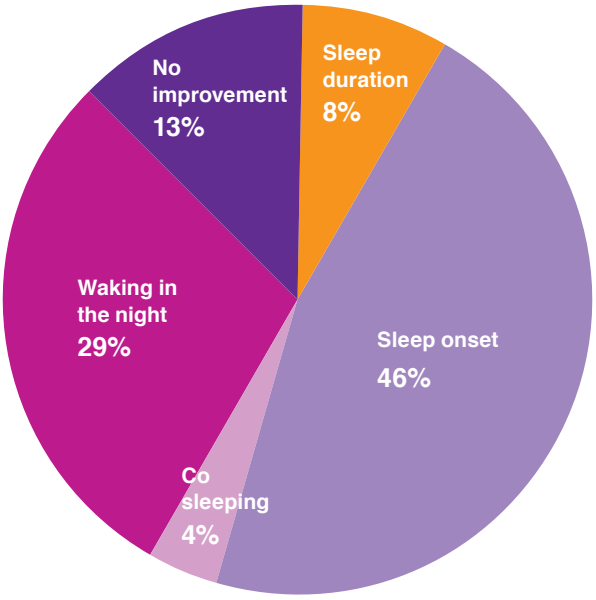
correlations between sleep onset delay and increased sensory seeking behaviours and differences in registration of sensory information.

When provided with a blanket, parents/caregivers are given written guidelines for its use based on those published by College of Occupational Therapists. They are also required to sign an equipment issue form to confirm they understand and agree to follow the guidelines and that the equipment will be reviewed.

A survey was conducted in order to gather evidence for the ongoing provision of weighted blankets. The survey was sent to all families who were provided with a blanket within a 12 month period. 68 surveys were sent, with 18 completed and returned. The ages of the children provided with weighted blankets ranged from 4-12 years of age. No demographic or diagnostic information was requested. The survey asked participants to highlight what the child's sleep difficulties were from the following list: delayed sleep onset, co-sleeping, waking in the night or sleep duration (waking early). They were asked if they believed the blanket had reduced the reported sleep problem. In addition, the participants were asked to detail any additional perceived benefits of the blanket as well as any difficulties/limitations in its use. The results are presented in the charts shown here.

The additional information reported by the participants included the following themes.

Reported sleep problems



Reported improvements

- Calming effect
- Relaxation
- Self-regulation strategy
- Helps for watching TV/DVDs with the family.
- Reduces fidgeting
- Improved sleep has led to improved quality of life and engagement in school work
- Reduction in restlessness during the night
- Used when feeling angry or anxious
- Helped the entire family
- Gives them comfort

Criticism of weighted blankets

- Design, colour not child friendly
- Makes the child hot in the summertime
- Not machine washable

Conclusion

The return rate for the survey was low which may have created a positive bias to the results.

However, the results show that most parent's perceptions were that weighted blankets support their children's sleep and engagement in activities as well as help their behaviour. The clinical audit supports previous research which has linked the use of weighted blankets to help individuals with heightened anxiety to calm.

The improved sleep reported within the audit is entirely the parent's perception, which may be related to the child appearing to be calmer around bedtime. Unfortunately, parent report of their child's sleep in isolation of any objective measure cannot provide conclusive data.

No demographic or diagnostic information was collected via the survey therefore no relationships or correlations can be deduced from the data. Despite the children having had an assessment of their sensory processing this data was not used as part of this audit to link their patterns of sensory responses and sleep to the effects of using a weighted blanket.

Future recommendations

There is a plan for the survey to be used as standard as part of the review process for weighted blankets, which will provide further data on their use and efficacy. Further information regarding the child's diagnoses, patterns of sensory integration challenges and the efficacy of a weighted blanket would be helpful in re-defining the guidelines for the recommendation of a weighted blanket. Analysis of sensory processing, sleep patterns and the efficacy of a weighted blanket would be a useful clinical audit for the future. Additional measures of anxiety may also be a useful tool in exploring the use of weighted blankets.

Please note, if weighted blankets are recommended as an intervention it is essential that published guidelines are used and adhered to. If asked about their use, clinicians have a responsibility to communicate the results of published research regarding their efficacy.

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What difference can Sensory Integration make to a teenage boy?

by By Clare Omoyele

Clare has spent the past 4 years working as Occupational Therapist Specialist Practitioner in a secure child and adolescent mental health unit developing a special interest in Sensory Integration, completing sensory integration training level 1, 2 and 3.

Who is MARK?

Mark (pseudonym) is a 15 year old boy, currently in a forensic mental health unit, with difficulties regulating his emotions and behaviour. At times, Mark has harmed himself. In addition to Mark's mental health diagnosis he has difficulties processing sensory information, thus affecting his ability to carry out day-to-day activities; such as making himself a snack, being able to remain seated and concentrate in class, picking up small items, using a knife and fork, and keeping up with his peers when riding a scooter or BMX. These difficulties have a negative impact on Mark's mental health reducing his self-confidence, self-esteem, as well as making him feel different from his peers.

What are Mark's difficulties?

Mark was assessed using clinical observations, the Adult/ Adolescent Sensory Profile (Brown, C and Dunn W. 2002) and Blanches Structured Clinical Observations (Blanche, E. 2010). These assessments show that Mark has difficulties with 'modulating' sensory information. This is the ability to regulate and control the sensory input his brain receives. Mark is 'sensory sensitive' and 'sensory avoiding', meaning that Mark can become overloaded by levels of sensory input that most people would consider normal. This overload of sensory information means Mark spends most of his day in a high state of arousal, where it is hard for him to concentrate, regulate his emotions and interact appropriately with others.

Mark also has difficulties processing tactile, vestibular and proprioceptive sensory input. These result in poor body scheme, awareness of his body in space and affect his ability to carry out and plan motor tasks (praxis). Mark describes this as 'my brain has a blurry picture of my body and what it is doing'. Mark reports finding it difficult to carry his

plate from the table, and navigate walking without tripping over. Mark often stands very close to people, or touches the walls and objects when moving around in order to help him know where his body is in space.

As well as the sensory assessment, Mark completed an Assessment of Motor and Process Skills (AMPS) which showed Mark had significant difficulties in both motor and processing skills by demonstrating increased clumsiness, decreased efficiency, and/or physical effort when performing familiar Activities of Daily living (ADL).This is caused by his sensory processing difficulties.

What we did?

To help Mark with his sensory processing difficulties Mark completed the Alert program (Williams, M S and Sheelenberger, S. 1994) and the Occupational Therapist developed a Sensory diet (Wilbarger, J and Wilbarger, P. 2002) of specialised strategies to help him manage his sensory difficulties day to day.

In addition Mark went to a specially designed Sensory Integration suite, which provided a sensory rich environment including suspended equipments, for 6 weeks, attending a total of 9 sessions. Mark set the following functional (distal) goals for the sessions:

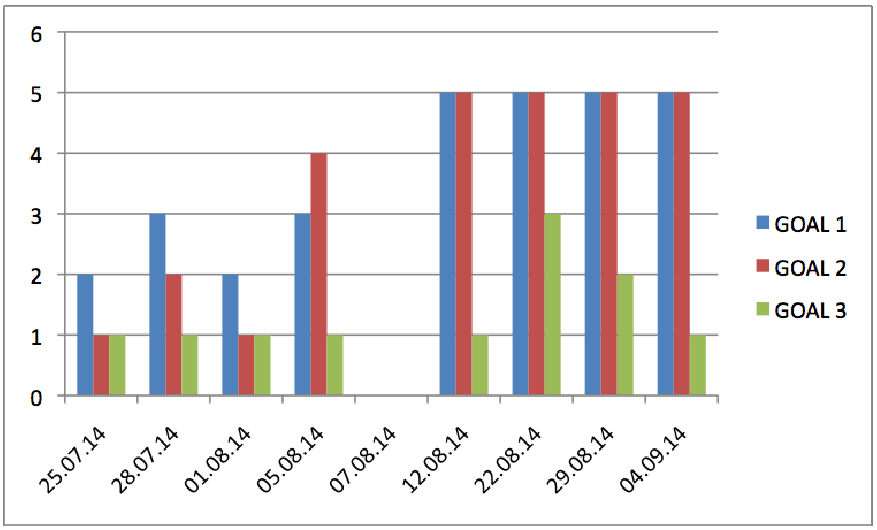
- To be able to ride his scooter and BMX bike.
- To improve his handwriting.
- To have better coordination to be able to carry things and cook easier.

The following Proximal GAS (Goal Attainment Scale) Goals were set based on performance components to help Mark meet his distal goals.

1. Mark to be able to stand, holding onto handles on the platform swing whilst self-propelling in a linear motion.
2. Mark to be able to sit on and swing moving in a linear way, whilst throwing objects at a static target.
3. Mark to be able to plan the activities for the session, setting up an obstacle course without prompting

How it helped?

This graph shows the improvement Mark made towards his goals during each of the sessions:



Key:

Much more than expected = 5
Somewhat less than expected =2
Somewhat more than expected = 4
Much less than expected =1
Expected level = 3

Performance area	Quality of performance at start of sessions	Quality of performance at end of sessions.
Sitting on platform swing (core stability)	Mark sat crossed leg on platform swing, propping with his knees against the ropes and moving by pulling on ropes.	Standing on the platform swing, self-propelling whilst throwing and catching.
Lying on platform swing (hard surface) (prone extension)	Lay flat on his back, fully supported by the platform swing.	Laying in prone across the swing (partially supported), head up and using hands bilaterally to work on fine motor tasks.
Throw and Catch (hand/eye coordination and bilateral coordination)	Catching a small gym ball, standing on a stable surface.	Throwing and catching a small ball whilst standing on the platform swing and self-propelling.
Setting Challenges/Tasks (planning of novel tasks)	Not having any involvement in the planning of the tasks.	Coming up with challenges for the climbing wall.
Sitting on beanbag swing (core stability)	Sitting on the beanbag swing with little/no control over movement of the swing.	Controlling the circular movement of the swing using his feet on the floor and by self-propelling, whilst kicking a football thrown at him.
Prone position across bean bag swing (soft surface) (prone extension, core stability, fine motor skills and calibration of force).	Mark struggling to get himself onto the bean bag swing in a prone position.	Whilst in prone on the swing, using hands to control and guide movements to collect small objects and return to central container.

Date	AMPS Motor Score	AMPS Process Skills
Prior to Treatment	-0.40	-0.40
After treatment sessions.	0.04	0.34

This table compares the result of the AMPS assessment completed prior to beginning intervention and at the end of the intervention period. There was a noted improvement in both his motor and process skills, but only the improvement in process skills is considered clinically significant.

Mark says that 'he enjoyed the sessions' and is always motivated to go to the sessions. Mark also reported that when doing the session he noticed that 'he touched things less' and his 'walking is better'.

Observationally, there has been an improvement made in Mark's ability to self-regulate, and is better managing his emotions. The increased awareness of his sensory needs has helped him manage stressful times, such as in education more successfully, with Mark spending longer in sessions and concentrating more. As the AMPS score shows, Mark was carrying out daily ADL tasks such as making a snack with less clumsiness, this was observed and noted during cooking sessions.

Working with a sensory integration frame of reference has helped Mark with his sensory processing difficulties, and although the improvements are small, they are clear to see even after a short period of intervention.

Parents Comments

The sensory integration program that Mark (pseudonym) took part in has highlighted the difficulties he has had over the last 15 years and we are pleased these have been noted as significant issues for him. Singularly they may seem insignificant, but put all together they have clearly had a huge impact on his mental and physical functioning.

To us, as parents, the sensory issues he has had explains a great deal of his behaviours, particularly those surrounding him not being able to regulate his emotions, his low self-esteem and his apparent clumsiness.

We now have a greater understanding of how he sees the world around him and how his high state of arousal significantly impacts on him being able to do what would appear to be normal day to day activities. We now realise he cannot manage in situations where he is overloaded with sensory input and can adjust our way of living accordingly to help him cope in a more appropriate and socially acceptable way.

The program also gives us an insight as to why he has struggled with friendships with his peers over the years and how his lack of concentration has severely impacted on his education.

We can see there has been a slight improvement in his ability to regulate his emotions, particularly when he is in crowded places or in stressful situations, he certainly does not appear to be quite as clumsy around the home and he does not seem to unnecessarily touch items in shops or be as physical with people in his family quite as much as he used to be.

We hope that with more sensory integration treatment, a better understanding of his own difficulties and maturity will help him to manage his emotions and behaviour, raise his self-esteem and promote more self confidence in the future in tackling tasks that seem impossible for him at present.

Mark's parents

6th January 2015

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