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Challenging and Disturbed Behaviour: A Sensory Integration Approach

Many individuals with severe and profound learning difficulties resort to disturbed or self-abusive behaviour when their environment and experiences do not provide a sufficient source of stimulation for them. Also, children with sensory disorders such as postural insecurity or auditory defensiveness, often mask a more positive potential level of functioning. A sensory integration approach advocates a correct assessment of sensory needs and the provision of an appropriate sensory enriched learning environment.

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CHALLENGE OF DISTURBED BEHAVIOUR

Understanding and meeting the needs of children with severe and profound learning difficulties is one of the most challenging and personally rewarding areas of work for professionals. The two most difficult aspects of care are in dealing with children who are violent and aggressive or who socially withdraw and resort to self stimulatory and self abusive behaviour. The simplistic response to this is to look at the presenting behaviours in isolation and develop behavioural management programmes to modify or control the behaviour. Unfortunately the record of success of these programmes is somewhat poor. The abusive or challenging behaviour has a tendency to re-emerge some months after the programme has stopped or it may reappear in another guise. In some cases where splinting has been provided as a physical restraint, children become dependent on them. They often become very disturbed when the splints are removed and only become calm when the splints are put back on again.

Instead of looking at the behavioural problems associated with this population as something that needs to be "managed" or "modified" one needs to step back and

ask the question: Why do these individuals behave in such a disturbing, self destructive way? It is clear that there is no consensus as to the degree of behavioural disturbance that can be expected as part of severe learning difficulties (Bhreathnach, 1994a; World Health Organisation, 1980). K. Goldstein (1948) discussing "catastrophic rages" suggests they may be due to a number of factors such as over-protection from the usual consequences of bad behaviour, the imposition of painful, unwelcome procedures (professional intervention could be defined in this way from the child's perspective) or excessive and unreasonable environmental pressures. The underlying reasons for disturbed behaviour are varied and complex. It is important therefore that there be close multidisciplinary co-operation to have it analysed from different perspectives. It is only through this process that we may hope to come closer to understanding the nature of the disturbed behaviour and be of real help to the individual with severe learning difficulties (Bhreathnach, 1992a).

WHAT IS SENSORY INTEGRATION?

Sensory experiences include touch, movement, body awareness, sight, sound, and the pull of gravity. The process of the brain organising and interpreting this information is called Sensory Integration. Sensory Integration provides a crucial foundation for later more complex learning and behaviour. Where there is a breakdown in sensory processing, problems such as being over or under-reactive to touch, movement sight or sound may occur. Hyperactivity, impulsive behaviour, physical clumsiness, are also symptomatic of poor sensory processing.

Sensory dysfunction can often lead to self stimulatory, self abusive, aggressive behaviour, when children have severe/profound learning difficulties. This severely impedes on their ability to function.

It is important to realise that severe sensory problems can mask the child's true level of functioning and prevent him/her from benefiting from ongoing programmes within the school environment. The child may present as being profoundly disabled because of the nature of his/her sensory dysfunction when in fact the child may only have a mild to moderate disability. Sensory Integration identifies several types of sensory dysfunction which severely interfere with the child's capacity to learn and function normally.

IDENTIFYING SENSORY DISORDERS

The main type of disorders encountered by professionals working in the field of

Special Education are described as follows:

RANGE OF SENSORY DISORDERS

1. **Tactile Defensiveness**
2. **Postural Insecurity**
3. **Gravitational Insecurity**
4. **Under-responsiveness to movement**
5. **Auditory Defensiveness**
6. **Visual Defensiveness**

Tactile Defensiveness is over-reaction to touch. There is a fear or flight response to touch. The child may be hyperactive, aggressive towards others and/or towards self. Behaviour becomes disturbed in activities which involve physical contact as in dressing, feeding, or play activities.

Postural Insecurity is when the child has a fear of falling due to poor physical control and balance. There is a dislike and fear of play equipment which moves.

Gravitational Insecurity is a fear response to movement of the head. The child avoids activities that involve being off the ground. The child is particularly fearful if tipped forwards or backwards. He or she will show increased anxiety when having to come down the steps of the bus or walking down an incline. At all times the child will keep his/her head in a fixed position avoiding movement of the head where at all possible.

Under-responsiveness to Movement refers to an insatiable desire on the part of the child to spin objects or to spin himself/herself. The child never seems to get dizzy and tends to be constantly 'on the go'. The brain is not responding normally to movement sensation. Other individuals will constantly seek to tilt their heads back whilst sitting. Grandin (1986), a person with autism, describes the effects of going on the Rotar Ride, a big barrel, in which people stood against the wall while it spun rapidly. Centrifugal force pushed the riders to the sides of the barrel even when the floor of the barrel dropped out: "With the creak of the hinges below.... my senses were so overwhelmed with stimulation that I didn't react with anxiety or fear. I only felt the sensation of comfort and relaxation".

Auditory Defensiveness is when the child experiences sound as unpleasant, even painful, such as the sound of a school bell which is particularly noxious. The child

is unable to filter out background noise. He places his/her hands over the ears. Loud noises are made to drown out other noises such as people talking. Behaviour may become disturbed, or the child's activity level will significantly increase, if there is a lot of background noise.

Visual Defensiveness is a fear or disturbed response to eye contact. The child will avoid looking at people or objects.

PREVALENCE OF SENSORY DISORDERS

It should be stated that the prevalence of these conditions in the population with severe learning difficulties appears to be quite high. In a pilot research study of children and adults, Sensory Defensiveness was found to be in the range of 75% to 80%. Those surveyed were classified as having challenging behaviour or were chosen because of their self stimulatory and self injurious behaviours (Bhreathnach, 1992b). In another pilot research study of adults, 85% of those surveyed were Tactile Defensive, 71% were Auditory Defensive, 36% were Visually Defensive, 71% were Posturally Insecure (Bhreathnach, 1994b). Clinical experience has found that sensory defensiveness must be treated first to reduce the level of stress and arousal before any other form of intervention can be carried out, particularly if it is of a cognitive nature such as behaviour modification. The child has to be in a state of readiness for learning before he/she can avail of and benefit from what's on offer in the educational setting.

In addition to the sensory disorders refered to, those with severe learning difficulties tend to present as being physically awkward or clumsy and have difficulty in skills which involve motor planning, organisation, anticipation, timing, sequencing and coordination. Problems in these areas reflect sensory-motor impairment as well as cognitive impairment.

SELF ABUSIVE BEHAVIOUR:THEORIES

There are two main categories of theories which attempt to explain the aetiology of these behaviours. It is important to briefly consider these in order to arrive at conclusions regarding the needs of children with severe/profound learning difficulties. The first theory suggests these behaviours are organic and are as a result of biochemical imbalance, cerebral irritation, neurological impairment or a genetic predisposition. The second theory suggests that individuals resort to this type of behaviour because of positive or negative social encounters. Edelson (1984) suggests that this type of behaviour originates from organic determinants

and is later maintained by the social environment.

The nature of these behaviours appears to be twofold. Some children when approached or handled increase the self stimulatory and self abusive behaviours as an arousal response. Why does this population self abuse when aroused ? Some research (Hutt & Hutt 1968) suggests that self abusive behaviour may reduce or block out environmental stimulation preventing the arousal level from reaching some critical limit.

Grandin (1986), gives rare insight into these behaviours. She describes people with autism as having "to make a choice of either self stimulating like spinning, mutilating themselves or escape into their inner world to screen outside stimuli. Otherwise they become overwhelmed with many simultaneous stimuli and react with temper tantrums, screaming, or other unacceptable behaviour." It is interesting to note that when they are aroused these children tend to bite, kick, head bang, rock, jump up and down or adopt strange postures which increases tension on the joints. In sensory terms these children are providing themselves with inhibitory type of stimulation (proprioception) to calm their over-aroused nervous system.

SELF-ABUSIVE BEHAVIOUR: OBSERVATIONS/INTERVENTIONS

In contrast, tactile self abusive behaviour such as damaging tissue has been suggested by several researchers as a form of self stimulatory behaviour. Sinclair (1981) explains that individuals with severe learning difficulties are often characterised as being insensitive to environmental stimulation. By damaging the skin's nerve structure they lower their threshold level to touch and the pain provides sensory reinforcement. Sensory Integration theory would suggest that where the individual cannot get their needs met from the environment or where the environment poses a perceived or imagined threat the individual will develop an unhealthy dependency on the use of his/her own body as a source of stimulation. Over a period of time the person habituates to their own stimulation, in other words they become desensitised and seek a more intense type of stimulus in order to feel the sensation.

If individuals are self stimulating or self abusing as a form of sensory stimulation then they will stop the self stimulatory and self abusive behaviour when given a similar type of stimulus as an alternative to them using their own bodies. This was illustrated during the adult survey. One of the young adults was seeking deep pressure through his joints by adopting strange positions. The investigator was

informed that he was a very aroused individual and was liable to kick out if approached. Interpreting his behaviour as seeking deep pressure through the joints (proprioceptive input) an alternative source was provided giving him joint compression. He smiled and laughed and became very relaxed. At no stage did he become aroused or attempt to attack the investigator. The reason being his sensory needs had been recognised and met (Bhreathnach, 1994b). Similar findings are found in research by Favell et al (1982) where for example, toy chewing was substituted for hand mouthing. In all cases the toys effectively reduced the self destructive behaviour - which also suggests individuals self abuse as a form of sensory stimulation.

'AGE-APPROPRIATE PLAY' AND APPROPRIATE SENSORY NEEDS

The key then would appear to be to identify the sensory need and provide the appropriate stimulus to meet the need. This leads on to the question "what is appropriate stimulation?" In the climate of political correctness there is a tendency to regard the use of toys and play as inappropriate with the adolescent or adult age group.

The misguided belief is that this is being disrespectful and it is seen to be socially unacceptable to relate to these individuals in this way. In Northern Ireland, teachers of older pupils are actively discouraged by school inspectors from having early learning toys in the classroom. The unfortunate result of this prevailing attitude is that children's and adult's needs are not being met. Chronological age is, in effect, being confused with developmental age. The reality is that a considerable number of adults with profound learning difficulties are actually functioning within the 0-9 month developmental age. The results (71%) of the adult survey (Bhreathnach 1994b) support this finding. Failure to recognise this in effect places the older child in a deprived environment where he/she cannot avail of the activities on offer because they are beyond the person's comprehension and ability. Environmental deprivation forces the child or, adult person to regress developmentally and resort to using his or her own body as a source of stimulus. The danger is that ultimately the behaviour may become self abusive. Deprivation lowers ones capacity for sensory stimulus from the environment and thus a cycle of increasing defensiveness and avoidance of interaction with the environment is begun. Self stimulatory, self abusive and challenging behaviour is inadvertently being facilitated as opposed to being inhibited because of this misguided policy.

ASSESSMENT OF SENSORY NEEDS

If the child has severe learning difficulties, or is hyperactive, then standard clinical testing is not possible. An alternative to testing is completion of a sensory-motor profile questionnaire, by parents and teachers. The questionnaire includes information on pregnancy, birth, early infancy, gross motor development, language development, play, self stimulatory and self abusive behaviour, general behaviour, behavioural responses to touch, movement, sound and visual stimuli (Bhreathnach 1992b). Analysis of the profile enables a therapist, who is trained in sensory integration, to identify significant clusters of behaviour which are indicative of dysfunction. Clinical observations of the child normally confirm the findings of the profile. Multiprofessional analysis of the child's problems should aim to identify the environmental and neurological factors which may be hindering the child from functioning within his capabilities.

SENSORY INTEGRATION: GENTLE INTERVENTION

Sensory Integration is a neurologically based treatment and is a post graduate specialism in the field of paediatrics. It is a child-centred approach which is non-cognitive in nature. Emphasis is on active participation of the child, however minimal. The child with severe learning difficulties is enticed into active participation by the sheer fun of the therapy (ISIA). In fact the key to successful therapy is fun.

Stress only leads to a breakdown in behaviour. Treatment does not involve the teaching of a skill or passive exercises, instead it focuses on providing the child with sensory motor experiences that will generally facilitate the development of foundation skills necessary for learning (Bhreathnach, 1995). Children are guided through play activities that involve touch, movement, body awareness, visual and auditory stimulation. Sensory Integration offers a humane, gentle and fun way of dealing with behaviours that usually cause heartbreak and hardship for families.

THE NEGATIVE IMPACT OF LIMITED PROVISION

Once children become aware that there is a special location where they can obtain their sensory needs they may become desperate to get to that location, becoming aroused when they see the occupational therapist or physiotherapist associated with providing them with their sensory needs. Coming back into a "deprived" classroom environment which is not meeting their needs they may become aroused because they long to return to the enriched environment from which they

have come. If teachers are not adequately trained to provide "carry over" from therapy, if they do not have the time nor the tools to facilitate progression and development this has negative and serious consequences:

- Pupils may in fact become worse after therapy. The teacher may find the child increasingly difficult to handle.
- Teachers may potentially become demoralised if they continue to see the child well behaved and happy in therapy in contrast to their own experience of the pupil.
- Staff/pupil ratio will have a significant impact on the ability to meet children's needs. Where this is a problem children's behaviour breaks down and staff become demoralised. The danger of burn out increases and the capacity to attend to children's needs is negatively affected.

RECOMMENDATIONS

Assessment of Needs

The key to the treatment of challenging behaviours is in the correct assessment of the quality of arousal. Determination of the appropriate quality and quantity of the sensory input to be provided is the most critical factor in confronting the behaviour (Faber 1982). Simply providing sensory stimulation will not be effective and may even increase arousal and maladaptive behaviour. Poor assessment procedures i.e the lack of access to clinical expertise, will not only lead to poor judgement regarding pupils' needs but will also lead to inefficient use of resources. In this regard there needs to be active cooperation between health and educational providers.

Provision of a Sensory Enriched Environment which is sensitive to the individual needs of the pupil

A high proportion of children with special needs suffer from Sensory Defensiveness. Any attempt to modify the child's behaviour will not alter his/her neurological response of defensiveness. It could be argued that one is attempting to modify the individual to suit organisational needs as opposed to modifying the environment to meet the needs of the individual child. Consideration needs to be given to the existing school environment and how it contributes to defensiveness and a breakdown in behaviour. The school needs to consider how it can control the volume of stimuli in order to be able to meet the different sensory needs of its pupils. Stimulation on all levels needs to be monitored and controlled. If the environment is overstimulating, i.e. walls full of brightly coloured posters, art work etc., loud school bell, clatter of chairs and tables, music playing, the traffic

of children and teachers walking around the classroom, it effectively becomes impossible to work on bringing down the level of arousal in a child and to get him/her to focus and attend to a particular activity. The classroom can be such a noisy environment that teachers themselves can become desensitised to the level of noise and are amazed when they see and hear their classroom on a video recording.

Teacher Training

Teachers need to be trained in the positive and negative effects of sensory stimulation, by a therapist who is trained in Sensory Integration. Teachers cannot "feel" what the child is actually experiencing. They therefore need to know how to understand body language, recognise the physiological sighns of over arousal, the delayed effects of over stimulation and the underlying reasons for challenging behaviours and in particular the impact of Sensory Defensiveness. This training is vital if they are to understand their pupils, with challenging behaviours, and avoid inadvertently triggering off an aroused response.

The real "challenging behaviour" for us as providers, is to meet children's needs as defined by them. They in fact are the best ones to indicate the type and amount of stimulation that they require.

REFERENCES

Bhreathnach, É. (1992a). "Sensory Integration". *Frontline*. Summer Issue.

Bhreathnach, É. (1992b). "Establishing a Role for Sensory Integrative Procedures in the Field of Mental Handicap". Paper presented at the International Occupational Therapy Conference, Trinity College Dublin.

Bhreathnach É. (1994a). "Understanding Our Clients' Needs". Paper presented at "Challenging and Disturbed Behaviours" Seminar organised by the Registration and Inspection Unit EHSSB, Belfast.

Bhreathnach, É. (1994b). *Survey of the Needs of the Profoundly Handicapped Adults attending Orchardville Social Education Centre & Edgecumbe Training and Resource Centre.* Commissioned by the Occupational Therapy Department of South & East Belfast Trust.

Bhreathnach É. (1995). *Your Child's Sensory Needs: A Guide for Parents* . (2nd Edition) Belfast: CTRS.

Edelson, S.M. (1984). "Implication of Sensory Stimulation in Self-Destructive Behaviour". *American Journal of Mental Deficiency* Vol.89, No. 2, 140-145.

Faber, S. D. (1982.) "A Multisensory approach to neurorehabilitation". In S. D. Faber (ed.), *Neurorehabilitation: A Multisensory approach* (pp. 115-177). Philadelphia: W.B. Saunders.

Favell, J. E., McGimsey, J.F., & Schell, R.M. (1982). Treatment of self-injury by providing alternate sensory activities. Analysis and Intervention. *Developmental Disabilities*, 2, 83-104.

Grandin, T. & Scariano, M. (1986). *Emergence Labelled Autistic.* Kent: Costello.

Goldstein, K. (1948). *Language and Language Disturbances.* New York: Grune & Stratton.

Hutt. S. J., & Hutt, C. (1968). Stereotypy, Arousal and Autism. *Human Development*, 11, 277-286.

Irish Sensory Integration Association. Information Sheet. 60 Bawnmore Rd. Belfast BY9 6LB Northern Ireland.

Sinclair, D. (1981). *Mechanism of Cutaneous Sensation.* Oxford: Oxford University Press.

World Health Organisation (1980). *International Classification of Impediments, Handicaps and Disabilities*. Geneva: WHO.