
SENSORY MODULATION IN ACUTE MENTAL HEALTH WARDS: A QUALITATIVE STUDY OF STAFF AND SERVICE USER PERSPECTIVES



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EXECUTIVE SUMMARY

The following report outlines the qualitative findings from a pilot study exploring the use of sensory modulation in New Zealand acute mental health services. The study is part of a larger initiative to reduce the use of seclusion and restraint in mental health services nationwide (Ministry of Health, 2010). The research involved collaboration between Te Pou, the Occupational Science and Therapy Department at Auckland University of Technology and the mental health inpatient units of four district health boards (DHBs).

The goal of reducing seclusion and restraint in acute mental health services has resulted in the exploration of alternative methods for managing distressed, agitated or aggressive behaviour (O'Hagan, 2006). Sensory modulation has been identified as a potential alternative to more coercive practices within acute mental health settings by supporting service users to self-regulate when distressed or agitated. The approach utilises sensory based equipment, strategies and environments to assist people in optimising emotional levels and engagement in everyday life. This is an emerging approach within mental health services and there is a need for further research to support its development and application, and provide evidence of its efficacy.

The purpose of the research outlined in this report was to explore the feasibility of using sensory modulation techniques and tools in acute psychiatric services with the specific aims of:

- Understanding service users' experience of using sensory modulation as a tool for the de-escalation of distress.
- Exploring staff member perspectives of using sensory modulation as an intervention for the de-escalation of distress.
- To identify specific facilitators and barriers to implementing sensory modulation in acute mental health wards.

The qualitative data reported in this document was gathered through service user and staff focus groups and individual interviews. Thematic analysis of the data provided insights into the process and outcomes of sensory modulation practice.

The findings suggest that sensory interventions are viewed by both staff and service users as being effective in modulating distress and promoting calm. Three key outcomes of sensory modulation were identified in the participant accounts, all of which support de-escalation of distress:

- Sensory modulation was perceived as an effective tool for inducing a calm state in the majority of people that used it.
- Sensory modulation supported the rapid building of trust and rapport for both service users and staff members.
- Sensory modulation facilitated the development of service users' self-management, increasing their awareness and ability to regulate their own emotional levels.

In addition to these outcomes, the findings shed light on the process of sensory modulation and specifically the mechanisms that support the above outcomes. Seven aspects were noted as being significant in the participant accounts:

- Creating a sense of safety
- Soothing through the sensory input
- Distracting attention from distressing thoughts, emotions and perceptions
- Stabilising or 'grounding' through the sensory input
- Creating positive associations
- Creating a sense of control
- Supporting expression and release of thoughts, emotion and energy.

These mechanisms interacted in a dynamic process as service users shifted their attention to their bodies and immediate environment, and engaged in a whole sensory experience created by the room, equipment and the supportive presence of a staff member.

The findings also highlighted important considerations in implementing the sensory modulation approach; including the set-up of the room and use of specific equipment, how staff members can best support service users to access and benefit from sensory modulation and what organisations need to consider when developing and maintaining a sensory approach within an inpatient service. Overall, participant responses reflected a high level of acceptability and a belief in the efficacy of sensory modulation. However, sensory modulation must be seen as one component of organisational change process if it is to have an impact on seclusion and restraint rates. Attention needs to be given to relevant policies, leadership and training if it is to be used effectively as a routine and effective addition to practice.

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1.0 INTRODUCTION

Sensory modulation is a clinical intervention that focuses on the use of environments, equipment and activities to regulate individuals' sensory experience and optimise physiological and emotional well-being. During mental health crises, the confluence of high levels of stress, significant cognitive and perceptual changes and emotional distress can result in hyper or hyposensitivity to sensory input. Providing opportunities for people experiencing acute symptoms to regulate their own emotional and behavioural responses through sensory input is seen as a promising strategy in acute mental health care.

This report presents the findings of a qualitative study exploring the use of sensory modulation in mental health inpatient units. The research is part of Te Pou's mixed-methods project *Seclusion: Time for a Change*, which aims to develop and evaluate tools for seclusion and restraint reduction. Supporting the safe implementation of sensory modulation in inpatient services and increasing the evidence base for the clinical use of sensory modulation is a significant aspect of this project. The qualitative research presented in this document aimed to capture the perceptions of mental health staff and service users who have utilised sensory modulation within inpatient settings. The study context, aims and research methods are outlined, followed by a review of relevant findings from the study. The study findings provide insights into how the sensory modulation approach was experienced, including perceptions of efficacy, acceptability, and barriers and facilitators to implementation. The report concludes with a discussion of key considerations and recommendations for future sensory modulation practice and research.

2.0 BACKGROUND

2.1 THE STUDY CONTEXT

Over the past decade recognition of the traumatising effects of seclusion and restraint on people has led to a focus on developing new strategies for managing distressed and aggressive behaviour in inpatient mental health services (O'Hagan, Davis & Long, 2008). In New Zealand the Ministry of Health (2010) has advised that seclusion should only be used as a last resort and points to the need for alternative practices and tools for seclusion reduction. Internationally, developments have been made towards this end, including the use of enhanced observations, incident reviews, repackaged aggression management training, and standardised tools to predict aggression as well as sensory-based approaches (The National Association of State Mental Health Program Directors, 2003, 2009).

After consultation with a range of stakeholders in New Zealand's mental health sector and a review of programmes and best practice guidelines from other countries, Te Pou has identified sensory modulation as being a key strategy for seclusion reduction. Overseas experience suggests that the sensory intervention 'makes sense' in a clinical setting, is practical and supports staff engagement with service users, requires limited or no extra paper work, and has no reported adverse effects (Te Pou, 2010). In 2008 Te Pou created an action plan for the development of seclusion reduction initiatives resulting in the *Seclusion: Time for a Change* project. Much of Te Pou's work in this project has focused on sensory modulation research and practice development.

Because the sensory modulation approach was developed within the field of occupational therapy the Department of Occupational Science and Therapy at Auckland University of Technology was invited, along with four DHBs, to collaborate in a mixed methods pilot study. The aim of the pilot study was to explore the feasibility of using sensory modulation within New Zealand's acute mental health services. This was piloted in one young person's and four adult inpatient units. The sites were selected based on criteria including service user demographics, the organisations' readiness to adopt the approach and the availability of a room for the sensory experience.

A dedicated sensory room was created at each site and services were provided with a range of sensory equipment. Clinical staff were trained in the theory and practice of sensory modulation as well as the process of data collection. A variety of qualitative and quantitative data was gathered from the sites over a nine month period. Data collected included pre and post session ratings of arousal, post session recording of staff and service user perceptions, and rates of admission, seclusion and restraint from each service. Further details of the pilot study are available in the publication [Impact of sensory modulation in mental health acute wards on reducing the use of seclusion](#) (Te Pou, 2010).

Initial qualitative data from the pilot study indicated that sensory modulation was perceived by staff and service users as a promising tool for the de-escalation of distress. However, the amount of data collected was limited and early in 2011 a second phase of qualitative data collection was conducted to build on the original pilot findings. The findings presented in this report draw on some of the initial qualitative data, but focus largely on the follow up accounts of sensory modulation practice.

2.2 SENSORY MODULATION AND MENTAL DISORDER

Sensory modulation can be described as the graded and adaptive regulation of sensory input (Miller, Reisman, McIntosh & Simon, 2001).

The filtering of sensory input occurs both neurologically and through conscious or unconscious behaviours. The capacity to regulate sensation is an essential aspect of everyday functioning and people with sensory modulation dysfunction may be overwhelmed, isolated, disorganised and experience difficulties adapting to life's challenges (Champagne, Koomar & Olson, 2010).

Research suggests that sensory modulation dysfunction is highly correlated with mental health symptoms (Brown, Cromwell, Fillion, Dunn, & Tollefson, 2002; Brown & Dunn, 2002; Brown, Tollefson, Dunn, Cromwell, & Fillion, 2001; Champagne, 2008; Koomar & Bundy, 2002). For example, one study found that when compared to a control group, people diagnosed with schizophrenia tended to miss available sensory stimuli, and when stimuli were detected, they were often avoided (Brown, Cromwell, Fillion, Dunn, & Tollefson, 2002).

People living with mental illness may experience hyper or hypo sensitivity to particular sensations, including touch, light, noise and vestibular input. This may become evident in avoidance of specific situations or experiences, missing certain sensory stimuli and high states of arousal and emotional reactivity. Sensory modulation difficulties are believed to contribute to psychiatric symptoms, such as anxiety and negative symptoms of schizophrenia, but they are also considered to be a consequence of mental health problems.

The relationship between sensation, arousal and emotion has been described as dynamic and non-linear, making it difficult to determine causal relationships. Sensory modulation problems are exacerbated by the sympathetic nervous system response, which is often over-reactive in people who are diagnosed with mental health conditions. This may create a dynamic of increasing arousal paralleled with decreasing regulation of sensory input.

2.3 SENSORY MODULATION INTERVENTION

Sensory modulation intervention involves the deliberate use of activities, behavioural strategies, specific equipment and modification of the physical and social environment to assist the regulation of an individual's sensory experience. Effective sensory modulation practice increases service users' awareness of their sensory preferences and assists them to manage their arousal through the application of sensory strategies. Sensory interventions can be utilised to increase or decrease arousal depending on the individual's level of sensitivity and alertness.

Literature suggests that sensory interventions need to be adapted to suit service users' context, age, cognition, sensory abilities, and other individual strengths and barriers (LeBel, Champagne, Stromberg & Coyle, 2010). Additionally, person-centred sensory modulation practice requires staff to recognise the impact of service users' past trauma experiences and provide support and skills to promote self-awareness and self-regulation through the use of sensory modalities (ibid). Components of a sensory modulation approach in mental health care include sensory screening and assessment, exploration of sensory tendencies and preferences, development of sensory-based activity schedules or 'diets', use of specific sensorimotor activities and modalities, modification of the physical environment, and education of family and caregivers (Champagne, 2006, 2008; Champagne & Stromberg, 2004; LeBel et al., 2010).

Internationally, the sensory modulation approach has been incorporated into a range of existing practice and organisational processes such as initial assessment, treatment planning and implementation, crisis prevention and de-escalation, policy and procedure development and environmental enhancements (LeBel et al., 2010). However, the research evidence supporting the application of sensory modulation in adult and youth mental health services is limited. Champagne and Stromberg (2004), Teitelbaum et al (2007), and Lindley and McDaniel (2009) have all reported significant improvements in service users' levels of distress and reductions in the use of restraint and/or seclusion following the introduction of sensory rooms to mental health services.

Champagne and Stromberg (2004) report that the use of a sensory room in one acute inpatient setting positively affected the experience of 89% of the service users over a year and in the same year restraint rates in the service dropped by 54%. In their study Teitelbaum, Volpo, Paran, Zislin and Drumer (2007) compared two wards segregated by sex, and concluded a statistically significant ($p=.05$) reduction in the use of seclusion could be attributed to use of a multisensory room.

In an unpublished account of the arousal/alertness levels of young people accessing residential care, Lindley and McDaniel (2009) reported that the number of young people who rated their level of arousal/alertness as being 'just right' improved from 4% to 87% following access to a sensory room.

A further study evaluated the use of a 'safety tool' which supported service users' to identify their sensory related stress triggers, warning signs and calming strategies (Lee, Cox, Whitecross, Williams & Hollander, 2010). The application of the safety tool was found to significantly reduce the use of seclusion in the participant group, and improved service user treatment in general.

Each of these studies has identified methodological limitations and the findings should be interpreted with caution. However, the research and anecdotal evidence related to the use of sensory modulation in inpatient psychiatry indicates that it is a promising approach with minimal contraindications. Importantly the emphasis of the approach on collaboration, individualisation and self-regulation aligns it with current mental health policy which advocates person-centred and recovery-focused care. For a further review of the literature related to the application of sensory modulation in mental health services see Te Pou's (2011) publication [*Sensory modulation in mental health clinical settings: A review of the literature.*](#)

3.0 METHODS

While a mixed methods design was utilised in the broader project, this report focuses on the findings of the qualitative aspect only. In designing the research, it was considered essential that the views of both staff and service users were collected, including their perceptions of the process and outcomes of the treatment. The collection of qualitative data was seen as vital in developing a picture of the efficacy and acceptability of the sensory tools from first-hand experience. Ethics approval for the study was granted by the Multi Regional Ethics Committee (MEC/09/05/058 & MEC/09/07/070) and by the participating DHBs.

3.1 STUDY PURPOSE AND AIMS

The purpose of the study was to gather practice-based evidence related to the use and impact of sensory modulation in acute mental health settings. Specifically the aims were:

- To understand service users' experience of using sensory modulation as a tool for the de-escalation of distress.
- To explore staff member perspectives of using sensory modulation as an intervention for the de-escalation of distress.
- To identify specific facilitators and barriers to implementing sensory modulation in acute mental health wards.

3.2 THE STUDY SITES

The study participants were recruited from the one young person's and three adult inpatient units that had been sensory modulation sites in the original pilot study. As part of the pilot study, each of the sites had established a dedicated sensory room and been provided with a range of sensory modulation equipment along with foundation level training for staff. The sensory equipment included a massage chair, rocking chair, bean-bag, soft 'mink' blankets, weighted blankets, weighted soft toy animals, a range of 'stress' balls, portable audio and DVD players with relaxing sounds, music and scenes, basic aromatherapy oils with an electric oil evaporator, scented hand creams and adjustable coloured lighting. Staff training involved a half-day workshop with education on the background theory and principles of sensory modulation and an introduction to the sensory tools.

Variations in the application of sensory modulation occurred across the sites particularly once the period of the pilot study had ended. Changes in leadership and policies and different levels of resourcing and ongoing staff training affected the participants' experience. In recognition of these variations and to provide a context for the participant accounts, the progress and significant features of each site's implementation of sensory modulation are summarised below.

At **Site 1** the sensory room was located in the High Needs Unit (HNU), visible from the nurses' station but not visible from the open area of unit. The use of the room was less structured than at other sites, with the room generally being left unlocked so that any service user or staff could use it when they wanted to. If there were potential issues identified for equipment to be broken or used unsafely the room was locked until the situation changed. There was no specific policy relating to the documentation of room use, although some staff documented using it if the use was significant.

The massage chair and a bubble tube had been broken and removed from the room, with the massage chair being replaced by a portable massaging pad. There were also issues with service users wanting to use their own perceived intense and aggressive music in the room and aromatherapy sprays being removed from the room and needing regular replacement. Plans had been developed to create two dedicated sensory rooms in a unit refurbishment, and for the sensory items and environmental modifications to be utilised throughout the whole unit.

A weighted products policy was also being developed. Ongoing funding for sensory equipment was not viewed as an issue for this service and an organisational wide plan to manage sensory modulation use and training needs was being developed. One staff member had recently completed a 'train the trainer' workshop in order to develop leadership in the implementation of the practice.

At **Site 2** the sensory room had been placed in a relatively quiet bedroom corridor of the general ward for the pilot study. Subsequently, a further two sensory rooms had been added in more acute and high needs areas of the service. Like Site 1, the room had been utilised fairly informally and significant equipment, such as weighted blankets had been lost and a massage chair broken. A locked cabinet and a sign in/out book for the equipment had recently been put in place and procedures were being developed in an effort to minimise further losses. More formal policies and a standard training programme for all staff were also being developed.

Some leaders for sensory modulation implementation had been recently identified and completed a 'train the trainers' workshop. There was an expectation that any sensory intervention be documented in electronic clinical notes. An application for funding had been made so that missing broken or worn out equipment could be replaced and a standardised set of equipment would be available on all wards.

The service at **Site 3** was in a temporary location with no sensory room when the interviews were conducted. During the pilot study, the sensory room was located in the open ward immediately outside the Intensive Care Unit (ICU) door and this was problematic. The room was a converted bedroom and staff felt it did not look like a sensory room as it was a confined space, felt very cramped and was generally uninviting. Distressed service users could be heard through the wall from a seclusion room in ICU and service users in ICU could not be released into the open ward to use the room unless escorted by a registered nurse.

A new unit was being developed and this included a purpose built sensory room, located so it would be easily accessed from both ICU and from the open ward. Policies for the use of sensory modulation were not well developed and applied inconsistently. The development of the new unit was seen as an opportunity to review and formalise these.

Because items such as sweets and massage oils went missing, equipment was eventually locked in a staff member's office. However, this made access difficult when the staff member was unavailable. A clip board was used for booking access to the room.

Current training was considered insufficient as there had been incidents resulting from inadequately trained staff using the approach inappropriately with service users. There was no requirement that new staff had to have comprehensive training and there was strong support for all staff to have at least one full day training when the new ward opened. Some staff suggested refresher training on a six-monthly basis. Securing sensory equipment and supplies was challenging and staff felt like they had to make the most of what they had, as there was uncertainty about future funding.

At **Site 4** the sensory room was located in the open ward, down a corridor containing bedrooms. Access for people in the HNU was an issue. Items such as weighted blankets had at times been taken to the HNU, but establishing a sensory room and getting approval to have sensory equipment permanently in the HNU was seen as the next challenge. Some steps had been taken towards this and the majority of staff seemed to support the idea.

The policies relating to sensory modulation were moderately well-developed but it was perceived that there was room for greater consistency in the application of these. The room was locked when not in use and a staff member accompanied service users in the room. The participants from Site 4 appeared to have applied sensory modulation the most consistently and broadly. A sensory preference assessment was conducted for all service users. A copy was placed in the service users' notes (kept in folder in the sensory room during the pilot study). It was suggested that a copy be kept in both the folder in the sensory room as well as the service user file so staff could easily refer to it.

The sensory room was fully functioning and also being used for small group work. Service users were supported to create 'sensory boxes' containing sensory items specifically tailored to them, and some staff had their own as well. All new staff were given an introduction to the room as part of the standard employee induction process. Formal training was not mandatory but most staff received training from a senior occupational therapist who had completed a 'train the trainer' module. There were plans to widen the availability of sensory modulation training beyond in-patient staff and include it as part of the regular mental health training schedule. The service had difficulty securing ongoing funding to replace or replenish items in the sensory room. Justifying the need, and obtaining funding, were described as lengthy and time consuming processes.

It was clear across the sites that the implementation of sensory modulation was seen as a work in progress. All of the services had encountered issues and all had plans for further development. Considerations related to implementation will be explored further in the study findings.

3.3 THE STUDY PARTICIPANTS

Staff and service users from the four intervention sites were invited by an intermediary to share their experience of sensory modulation, in either a focus group or an individual interview. Key workers or consumer advisors acted as intermediaries in the recruitment of service users. Service users who (a) had used the sensory room and (b) were alright to be interviewed were approached, given information about the study and invited to participate. If the service user did not want to be interviewed, no further action was taken. If the service user expressed interest in participating, the intermediary arranged a time for the interview or focus group to take place and introduced the researcher and the service user. Most service user participants were contacted once they had been discharged from the service.

Twenty service users volunteered to share their experience of sensory modulation. Half participated in focus groups and the remaining half engaged in individual interviews. Their experience of symptoms while in the acute services was broad and included anxiety, elevated and depressed mood, psychosis, urges to self-harm, and dissociation. All service user participants had accessed the sensory intervention while in adult mental health services. Of the 20 service user participants only two were male.

The unit managers or another senior clinician acted as an intermediary in the recruitment of staff participants. Forty staff volunteered to share their experiences and most were interviewed individually, due to difficulty co-ordinating time away from the ward for focus groups. The staff participants consisted of 32 nurses (including two charge nurses and a nurse staff liaison), four occupational therapists, one occupational therapy assistant, one psychologist, one consumer advisor and one kaumatua. Most of the staff participants were employed in adult mental health services with only eight working in the child and adolescent service. The majority of the four male and 37 female staff had at least three years' experience in acute mental health practice.

3.4 DATA COLLECTION AND ANALYSIS

The data collection occurred in two phases, beginning with a first round in 2009 when nine service users and eight staff volunteered to share their experience of sensory modulation as part of the pilot study. One staff focus group and two service user focus groups were conducted, along with some individual interviews with staff from two sites. This initial data collection occurred while practice was still being embedded in the first six months following the introduction of the sensory rooms. The service user focus groups were facilitated at a neutral site away from the mental health services, and the individual interviews were conducted in a private room within the mental health services.

The second round of data collection began early in 2011, when 43 participants were interviewed individually. Thirty two of the participants were staff and the remaining 11 were service users. With over a year passing since the first round of data collection, a range of additions and adaptations to the intervention had taken place and different sites had embedded the sensory approach to varying levels. Some broader issues with organisational systems and maintenance of the sensory room and equipment had become apparent. While some sites had developed solutions to these issues, many of the difficulties had not been resolved and all sites viewed the implementation of the approach as on-going. The staff interviews were conducted within the mental health service and service users were interviewed either at the mental health service or at their home. All participants gave informed consent for their responses to be recorded and used as research data.

The focus groups and interviews were conducted by members of the research team who were not employees of the participating mental health services. Descriptions of the participants' experience with the sensory interventions were gathered through semi-structured interviews, with questions focusing on the sensory modulation process and outcomes. Both staff and service users were asked to comment on their overall experience with sensory modulation, barriers and facilitators to using the approach, experience with specific sensory modulation equipment and ideas for improvements (see appendix A for interview schedules). The length of interviews varied from 15 minutes to over an hour, with the majority lasting around 30 minutes. All focus groups and interviews were audio recorded and transcribed for analysis, and service users were offered the opportunity to debrief with a consumer advisor or another trusted staff member after their interviews.

The transcribed data was analysed using qualitative descriptive methods, consisting of thematic categorisation and analysis of participant responses. The first round of data was categorised according to broad themes which emerged from the participants responses. The themes were: overall perception of the process, perception of the outcomes (both positive and negative aspects), experience of specific equipment (positive and negative aspects), specific facilitators and barriers to using sensory modulation (interpersonal, environmental, organisational), and considerations for improvement (interpersonal, equipment/environment, organisational). The categorisation of accounts was completed using Nvivo software and once the first round of analysis was complete, further thematic analysis revealed sub themes within each of the above categories.

The findings from the focus group data informed the interview schedules for the second round of individual interviews. The same process of categorisation and thematic analysis was applied to this second round of data, adding depth and further themes to the initial findings. Three members of the research team were involved in the data analysis which allowed cross checking for consistency in the final themes and sub themes.

4.0 FINDINGS

As outlined earlier, sensory modulation was adapted and utilised in different ways over time, across the four sites. Variations in implementation shed light on a range of possible issues and highlighted key considerations for making sensory modulation sustainable and effective. These service level considerations will be addressed in the later findings but the common themes that emerged from the participants' experience of using sensory modulation will be outlined first. The overall perceptions of service users and staff are presented initially, with a focus on perceived outcomes. Then the specific ways in which sensory modulation supported de-escalation are analysed before the findings chapter is concluded with analysis of implementation issues and facilitators.

4.1 PERCEIVED OUTCOMES OF SENSORY MODULATION

Analysis of the focus group and interview data indicated a positive response to sensory modulation from service user participants and the vast majority of staff. While a number of the staff members expressed initial reservations related to the potential value of sensory modulation, most were pleased with the outcomes for particular service users they had worked with.

Some participants also commented on the impact that a sensory modulation approach had on inpatient services in general. Service users described how having access to the sensory room and equipment affected their experience of being in the ward. This was well illustrated by one participant's statement:

It's totally changed my experience of being on the ward. Previously, the ward has been like a holding pen for me...it's sort of like a waiting, waiting, waiting until something happens. This last admission...I did use the room quite a bit, I did find myself a lot more aware and a lot more, engaging with staff, engaging with other clients, having a bit of a plan for my day. (SU14 Site4)

Staff too believed that the approach had positively affected the general ward environment: "I guess I do think that our ward has a nice feel to it, compared to other in-patient wards. I do think some of that is because of the sensory room. So I think it has an impact on the atmosphere." (SM12 Site4)

Analysis of participant reports revealed three key themes related to the outcomes of implementing a sensory modulation approach. Specifically, it provided: a) another option for calming, b) a tool for facilitating interpersonal connection, c) and a tool for facilitating service user self-management. These themes are illustrated using excerpts from the staff and service user accounts.

A TOOL FOR CALMING

Overall participants viewed sensory modulation as a useful addition to their existing options for calming distress. For example, one clinician stated:

I found it very useful...and we had reports and feedback from the [service users] that it was very useful as another resource for de-escalation. (SM3 Site3)

All of the clinical staff interviewed were able to give descriptions of how sensory modulation had been used to assist the reduction of service user distress. A range of these accounts are presented in Table 1 to provide examples of how sensory modulation was effective for calming with people experiencing a variety of symptoms.

Table 1 examples of intervention application

SYMPTOM EXPERIENCED	PARTICIPANT STATEMENTS
Urge to Self Harm	<i>I had one person who comes in regularly, and she bangs her head against the wall and she can hurt herself quite badly. Her nurse was trying to get her to calm down. We suggested the sensory room, and that just worked amazingly. So she got in there and stopped head banging, she calmed down completely within 15 minutes, and for the rest of the day, was calm and settled. But if that hadn't been there to be used, she would've probably been given more PRN or restrained ... 'cause it's the only way to keep her safe. (SM 16, Site4)</i>
Flashbacks	<i>A young lady with very, very, very severe post traumatic stress disorder, and she'd have horrible flash backs and when she was stressed it was as if she was right in that moment back in her past. I found that using the sensory room prior to her getting in those states and sometimes if we were quick enough, just as she was beginning to enter that state - I found it very effective. (SM 3, Site1)</i>
Elevated Mood	<i>She was talking to people all the time; she had visitors every afternoon and lots of them. And she was really, really tired but she couldn't slow down. So we tried the sensory room. I sort of introduced it as some time just for her. And we got into the room and she sat in the massage chair and she was still talking to me all the time... talking about her experience and what it was like. And then I just said to her, 'it's actually okay if we just sit here together, you don't have to talk, it's okay' and the look of relief on her face - she just stopped, and she was actually able to just be quiet for the next 15 minutes. It just gave her that little rest, so I think that worked really well.(SM8 Site 4)</i>
Voice hearing/low mood	<i>She was going through a fairly acute phase of schizophrenia where her voices were really bad and very low in mood and we got her in there. And she brightened up a little bit because it was something new. Then she started figuring out how the massage chair worked, pushing the various buttons and looking at other things. And she found it really good 'cause it distracted her from the voices. And then it gave her something to think about and focus on that was external. She found it useful. (SM2 Site 3)</i>
Anxiety	<i>It was with a highly anxious lady... She requested to use it because she'd used it in the past and she found it helpful...I think we were in there for about 45 minutes and we were talking at the same time. She just sat with the blanket and the massaging chair, a heavy animal. Her anxiety levels decreased and she was fine afterwards. I didn't have to use any PRN at all with her. (SM4 Site3)</i>
Dissociation	<i>Some young ladies on the open unit, with eating disorders, would choose to use the room either pre or post meal to help manage anxiety around that. I found that to be a really effective intervention for them as part of their care. (SM 8, Site1)</i>
Dissociation	<i>Under stress, one of the things that happens with me is that I dissociate. I can dissociate or depersonalise...it just leaves me feeling a million miles away and I find that anxiety-inducing as well because I sort of get to the point that I sort of don't feel as present. You know, I get out of touch with my body and I found the weighted blanket was really good from a reassuring point of view... grounding, the physical sensation. (SU2 Site 4)</i>
Confusion/ disorientation	<i>With the old age people the weighted dog or cat seemed to help. It seemed to slow down the agitation and confusion. Anchored them a bit. (SM1 Site 2)</i>

The extent to which staff participants believed that sensory modulation was effective varied, with factors such as experience with the practice, level of training and organisational culture and policy affecting their application and perceptions. In describing their experience, several staff members estimated their success rates in using sensory modulation. Perceptions ranged from success half the time, at a site where the room was located in a high needs area:

Someone's starting to pace around, get angry, swearing and I just say 'come and relax in the room, sit in the chair', and not all the time but half the time they'd say oh I feel a bit better, feel more relaxed. (SM7 Site1)

To other accounts where participants reported a successful outcome every time they used sensory modulation, as illustrated in the following excerpt:

From what I saw, it was a hundred per cent effective to calm people down. The people that I took in, it calmed them down. I can't really say for other people, but every time a person came out of it, they were much more calmer the when they went in. (SM4 Site3)

While there was some variation in the experience of success, there was a clear perception throughout the accounts that sensory modulation helped to calm most people that used it:

From what I've seen yeah, it's very effective. Like a lot of things, it doesn't work for everyone and, you know, there are people who don't like it. But I think a majority of the people who use it have gotten a lot of benefit out of it. (SM10 Site4)

When asked how long the effects lasted, staff participants stated that the impact was not long term, but long enough to enable people to engage in something more restful, constructive or therapeutic. For example, one staff interviewee reported:

For really agitated people [I] wouldn't say [the effects are] too long term, maybe half a day or something, or enough so that they could move to their bedroom or were able to rest for a while" (SM1 Site2)

Similarly, a service user stated:

It made you stop long enough to calm down and think about what you were doing... (SU1 Site4)

The sensory approach was widely valued as an addition to existing de-escalation strategies. Many staff and service user participants viewed the timely use of sensory modulation as a way of avoiding other medical or restrictive interventions. Staff expressed a belief that they had used less PRN medication with some people because they had been able to access the sensory interventions:

She was scratching her face and that, if that sensory room wasn't there I would have just PRN'd her straight away. (SM2 Site4)

I think it has been effective in decreasing the use of PRN, because it is a form of PRN itself. (SM14 Site4)

Well it stops PRN, it is amazing. They usually say 'I haven't had any PRN', [I say] 'yeah you had that chair', and they say 'no, no, no, on the medication', I say 'there you are, it must be good. It must be good if you don't use much PRN'. (SM2 Site2)

Service users also believed that the sensory strategies provided a useful alternative to PRN medication. For example, one stated:

To try and use alternatives is far better than popping a pill, because the skills that you learned in there, you could bring out. In my hand bag I've got hand cream, rescue remedy, and a squidgy ball that I carry around all the time, because it's something I can do, you know rather than carrying a bottle of Clonazepam... It was far more beneficial learning how to cope with it than to pop a pill. (SU1 Site4)

Another participant reported how she had used the sensory intervention in conjunction with medication to reduce highly agitated behaviour:

I was quite acute most of the time when I came in; I found that it [sensory modulation] didn't always take away my need to use PRN medication. I often used to use it in conjunction with it. But it would make the medication work better for me..... Towards the end though before I got discharged, I would be using it rather than PRN. (SU4 Site4)

Staff described how sensory modulation or a combination of sensory modulation and PRN medication calmed service users sufficiently to avoid having to use seclusion:

That's definitely another tool for us to use instead of seclusion. At least try it first and obviously sometimes seclusion is inevitable, but it's another tool you've got up your sleeve to use before you [use] a restrictive environment. (SM6 Site1)

I've used PRN and the sensory room together. I think that's really, really helpful and that is in order to prevent a seclusion incident. (SM3 Site1)

The last two [service users] that I took in...it was like a toss-up between there and seclusion, for one it...removed them from the environment and then it gave them time to actually look at how they were behaving. (SM5 Site1)

Several service user accounts also believed that the sensory interventions helped them to avoid being placed in more secure environments. For example, one participant stated:

"I know for me, definitely it did help with avoiding going to HNU [the High Needs Unit], it gave me the choice, you know, to do that." (SU5, Site4)

A further example described how agitated behaviour was reduced and potential seclusion avoided:

I spent an awful lot of time sitting on that chair with a weighted blanket on me. It definitely got me through quite a number of times where staff would have been chasing me out of the ward ... I really do think it probably minimised that to a great extent, where the meds weren't really doing it for me... they obviously helped to some extent, but it wasn't enough. Certainly the combination of taking the edge off with the meds and then offering me that physical stimulation definitely made a huge difference for me. (SU2 Site4)

Service users reported that sensory modulation provided better options for managing distress than needing to self-harm. Some found that they could use sensory strategies to get through a period of distress with fewer side effects, as the following account shows:

In fact, [self-harm] was one of the main reasons I was here on the ward, and for me, most of the time that's a way of grounding myself, and the massage chair was actually a great safe alternative. I think that's why it was offered to me quite as much as it was, because it was reducing the self-harm behaviours quite dramatically... The more I used it, the more I became aware and realised that it was actually an alternative that provided, obviously not the endorphin rush that goes along with the other [self-harm] behaviours, but obviously without any of the disadvantages, you know. It might not have had quite the impact as if I had gone and self-harmed, but I didn't have to deal with, you know, the ramifications.... there's plenty of other options for physical sensation that aren't necessarily hard out pain, you know?... (SU2 Site4)

In addition to providing a tool for calming in the context of de-escalation, sensory modulation was also used for calming when service users were having difficulty sleeping or prior to undertaking potentially stressful tasks such as blood tests, medication administration and meeting with medical staff:

We had a person that was having an IM injection and for them that's quite anxiety-provoking so even though at the time they weren't particularly anxious or upset or distressed, I remember we just went into the sensory room and used it as a relaxant prior to that happening, as a preventative [intervention]. (SM6 Site1)

The room was particularly effective with one of [the service users]. She even started having meetings with the doctors in the sensory room because it made her feel a lot less anxious and allowed her to express herself rather than... sitting in an interview room in a very kind of sterile environment when she felt very anxious. (SM6 Site3)

Generally participants were reticent about commenting on the direct impact of sensory modulation on overall service rates of PRN use, seclusion and restraint. With or without individual service statistics, the number of variables influencing these practices makes determining the overall impact very difficult. However, staff and service users were willing to comment on their individual experiences and these comments suggested that while sensory modulation did not work every time with everyone, it was perceived as an effective tool for calming and the de-escalation of distress for the majority of people that used it. It was found to be a useful alternative or adjunct to PRN medication and was reported to have prevented the need for seclusion in specific situations.

FACILITATING INTERPERSONAL CONNECTION

Increased connection between service users and staff members was another key theme within the participant accounts of using sensory modulation. Having someone present in a soothing or stabilising manner was often as important to service users as the room and equipment. Service users valued the uninterrupted one to one time and appreciated the sense of interpersonal connection that resulted from time in the sensory room:

I found it good for a connection with staff, 'cause when they're busy on the wards, they don't have time to talk to you, and at least in the sensory room... you actually got that one-on-one time for 15 minutes or so with that nurse. (SU13 Site4)

In addition to having a staff member present and attuned to their experience, service users also suggested that having someone to talk to was important in creating connection:

For me, it's been a place, at times, where I've been able to talk openly and freely to nurses about what's going on in my head. (SU1 Site4)

A number of staff participants also described how the application of sensory modulation created an opportunity for developing trust and relationship:

If they [service users] wanted to talk more that was their opportunity... The sensory room in itself became the vehicle that allowed that to happen. (SM3, Site4)

Trialling and accessing the sensory approach and tools with service users was perceived as a means to rapidly build rapport and share meaningful experiences, even in the absence of verbal communication. For example, one staff member stated:

That rapport building as well... you're not communicating verbally with them, but you've still built up a rapport...they trust you. ... talking and building up communication and building up that rapport, it's kind of just come instantly with that person. (SM10 Site4)

Some staff members reported waiting outside the room while service users accessed the sensory tools suggesting that it felt too 'close' for them or the service user and compromised the potential for calming. The close proximity and other aspects of the intervention, such as dim lighting, called for a certain level of trust between service users and staff members:

I think it's just that you're in there in a small-ish room, and they're trusting you enough to let you be in there with them. I mean, if they didn't trust you they (a) wouldn't go in, and (b) they wouldn't want you to stick around and they'd probably either ask you to leave, which you can't do anyway, or they just get up and walk out. (SM10 Site4)

Mutual trust was particularly important in situations of high arousal, where agitation, distress and vulnerability were present. Despite the potential vulnerability of the situation, other staff suggested that developing trust and being alongside the service user, rather than waiting outside the room, was a key aspect of the approach:

Usually when they're relaxed, they can talk and they talk quite freely, you know. I think it gives you a real good rapport, because they're like, 'this person cares about me', you know and 'I'm really enjoying this and she's not pushing me'. I find that you have to sit with them, you can't just put them in the room and say there you are, 15 minutes, go for it, because you don't get the benefit. It's the talking, relaxing and getting a rapport with them. You know in the time that I've been in mental health I find this is really the best way of talking with people... 'cause you're having to talk with them, get their feelings, to see how they're getting on, you know, where they're at....(SM2 Site2)

Participant descriptions described how focusing on the sensory equipment and environment aided rapport-building:

If it's someone you're just starting to get rapport with, it's really good for cementing it. Because it's one of those, you're in the room with the person on their own for an hour. Which, in an acute ward is golden, it's really hard to get serious one on one time....If you're in a sensory room you're sitting and talking to someone but you're doing something else at the same time. Which is a more relaxed atmosphere. (SM2 Site3)

Accounts such as this indicated that sensory modulation not only induced a relaxed atmosphere, but also shifted attention to something external and allowed staff members to get alongside to work in close proximity with service users. Additionally, the approach encouraged staff to 'tune' into and talk with service users about their experiences.

As well as having a calming effect sensory modulation was perceived as a tool for developing meaningful connection between staff and service users. Interpersonal relationships are a significant factor in the managing distress and the findings suggested that the sensory room and equipment enhanced interpersonal interaction by facilitating the rapid building of rapport and trust.

FACILITATING SELF-MANAGEMENT

Another significant outcome of sensory modulation was the development of service users' ability to manage their own agitation and distress. Service users are active in the approach, reflecting that sensory modulation is not something that is 'done to' an individual, but one that must be voluntary and person-led. For example, one staff participant stated:

[People] can de-escalate and just collect themselves, and also distract themselves, from their thoughts, you know, if they get agitated or anxious. (SM1 Site1)

While the initial focus of the study was on implementing sensory modulation as an inpatient de-escalation tool, both staff and service users recognised the potential for increasing service user capacity for self-management. Staff members suggested that the practical nature of the approach let service users to take responsibility for calming themselves:

It did take longer than giving people medication but it gave people a real strategy of how to help themselves next time. So instead of just sticking a plaster on it, on the problem, which is kind of what PRN does... you're actually giving somebody a really concrete way of dealing with their problems. (SM6 Site3)

Staff participants also commented on the need to take sensory modulation beyond the sensory room and into the wider service and home environment. One commented:

...and there's the tools in that room that they can figure out what helps, and then hopefully, they can think about how to take that home in some form. (SM9 Site4)

Similarly, another staff member noted:

So, in terms of it like being effective here, yeah definitely, but then also the goal is to use what they learnt here and transfer it out into the real world outside. (SM10 Site4)

Some staff members identified opportunities to bring a sensory modulation perspective to everyday experiences and activities, such as exploring the outdoors and by supporting the use of sensory strategies and equipment in a range of situations.

For some service user participants the insights gained by exploring sensory strategies on the ward were invaluable. One participant recognised that regulating her sensory input in times of high stress was something that she already did, and she was subsequently able to build on this awareness:

I think in some respects probably the biggest thing it offers, rather than the immediate pay off of actually using the room, is allowing that insight I suppose...to make that a conscious choice, and to realise that actually you have other alternatives... In high stress situations I'll go and have a hot bath...or I go and lay on the grass and feel the texture of the grass. That kind of thing, and I think I've always had some of those to

some degree, but I wasn't as conscious of the sensory aspect of that... realising just how powerful it was in that context. (SU2, Site4)

Service users also described how they had successfully integrated sensory modulation strategies into their everyday lives. Several reported using specific strategies that they had learnt on the ward, as the following account illustrates: “I utilise the stress ball I've got at home and the deep breathing all the time which I have learnt from there, so yeah, find that really helpful to get through tough situations I'm faced with.” (SU16 Site4)

Some service users set up dedicated sensory spaces within their home and one participant created her own sensory room in a shed, where she and her family used the strategies she learnt within the inpatient unit. The following excerpt demonstrates the impact of this on her recovery:

I can remember a particular time when I was feeling really, really awful. It's a different kind of PRN, where I wanted to get completely drunk. And I just had one glass and then I thought no I am not going to keep drinking. It's not going to do any good. I will go out to my sensory room, and I rocked myself to sleep in the rocking chair - and that stopped me from going any further. In the past I found using skills very, very difficult, but they're getting a lot easier now. I've only had one admission since I've had the room. And that was only for a very short time. It was only like three days, whereas my other admissions were much longer. (SU4 Site4)

Accounts such as these suggested that the validation of existing self-management strategies as well as the facilitation of increased personal-responsibility was a further significant outcome of sensory modulation approaches. Staff participants found that they could facilitate the use of other cognitively based relaxation, mindfulness and self-soothing methods once the sensory interventions had sufficiently reduced a service user's distress level. One staff member highlighted the potential for instilling hope through this aspect of sensory modulation practice:

I just thought, it goes in the section of hope, because when you're trying to regulate your emotions, it's a hard time to try and hold onto hope, but if you've got some empowerment [for] regulating your emotions, because you're using a tool box, then that's bringing hope back alive isn't it? (SM5 Site4)

In addition to being an effective approach for calming and increasing interpersonal connection, the sensory modulation approach also enhanced service user self-awareness and capacity for self-management. By supporting service users to develop their own practical sensory strategies, sensory modulation had the potential to broaden the focus of de-escalation practices and better support recovery.

VARIATIONS IN PERCEIVED EFFICACY AND ACCEPTABILITY

Staff participants expressed a range of views concerning which populations or clinical presentations the sensory modulation approach might be most effective for. The following excerpts are typical of the responses given by staff when asked who they found it worked best with:

I guess if someone's hearing voices and they're really distressed by them, it's very helpful with that. If someone is just a wee bit agitated, or they're just really tearful, or quite anxious. If someone's just needing... that stimulation, but they're not quite requiring an HNU environment, a brief sort of one on one time, a little bit agitated... - I think it's good for them. (SM9 Site4)

I think people with depression, anxiety and personality disorder and some people... [who] have some kind of psychosis or hear voices, yeah, it's different for different clients. (SM5 Site3)

Naturally, staff participants based their views on the range of people they had worked with or on what they had observed on the ward, leading to beliefs about the efficacy for certain populations or clinical presentations. Most staff believed that sensory modulation was useful for people who were anxious, stressed and emotionally upset. Some reported that the practice seemed to be particularly helpful for people with a diagnosis of borderline personality disorder, trauma histories and self-harm behaviours. Others stated it was very helpful for distracting people who were experiencing distressing voices and grounding those with an elevated mood. Despite the variations in perception, the collected accounts demonstrate the successful use of sensory modulation across people with a broad range of diagnoses and clinical presentations, as previously illustrated in Table 1.

Because the rooms were largely located in the general ward, some staff were not sure how the approach would work in a high needs unit with service users who had greater levels of acuity. At times staff members were able to take service users from the high needs area into the sensory room and some staff reported taking sensory equipment into the secure area to use with service users there. These staff participants were able to give examples of situations where sensory modulation was used successfully with acutely unwell people, as the following accounts illustrate:

I took some of them out to a girl who was in our locked ICU area that was very distressed and very psychotic. We sat there blowing bubbles and playing with slime and all kinds of things which got her quite calm for a couple of hours, just by playing with a few fidgets and blowing some bubbles with the bubble blowers and trying to catch them. Yeah, so that was a nice way of kind of not being able to take her into the sensory room but taking the sensory modalities to her and still using the basic principles of it. (SM6 Site3)

I think those weighted blankets helped with a lady who was agitated. She liked that. She was from HNU... They don't necessarily want to go in the room, they just want the blanket...and then it's hard to say we've got to take them back. (SM4 Site4)

I've taken one person in there who basically wanted to trash a room... and to some degree I let them, like I let them throw the pillows around because that wasn't going to do any damage and stuff. And it was only when their behaviour continued to escalate that I said well you can't use that room if you're going to damage it. They were actually able to then bring themselves down because they didn't want to come out of the room. (SM5 Site1)

The one situation where staff consistently thought the use of the sensory room in particular would not be effective was when there was concern about staff and service user safety. This type of risk can sometimes be associated with people who were “very psychotic”, leading some staff to comment that sensory modulation was not appropriate for people who were experiencing severe psychosis. However, a range of factors in addition to symptoms are likely to determine both risk and sensory modulation outcomes. For instance, other accounts reported the successful use of sensory modulation despite psychosis, because of individuals’ level of self-awareness:

It's probably dependent on the patient. I mean this lady was very psychotic, but also, she has good insight. She knows that she's psychotic and so she uses it [sensory modulation] for distraction. It takes her mind off what's going on as well. (SM1 Site3)

This and other excerpts suggested that individual factors, such as the extent to which service users had developed self-awareness and strategies for self-regulation, were just as significant in determining efficacy as diagnosis or clinical presentation. The significance of these individual factors was reflected in many of the accounts where service users were encouraged to identify their sensory preferences and choose equipment to suit their own personal needs.

Although sensory modulation was frequently individualised, one staff participant suggested that the approach was perceived by some men as not being very masculine, thus reducing its general acceptability:

It is hard getting males to accept it as another treatment medium....I think it is quite difficult to get them to utilise it once they've left hospital (SM10, Site4)

However, other accounts also described how it had been used effectively with men, despite their reservations:

I took one guy in there and he was, you know, like a man's man sort of thing. He's like 'I don't need this rubbish'. I took him in, he went straight for the massage chair, as everyone does, and, you know, I just like orientated him to, to the place as well. ...It turned out that he liked the weighted blankets. He sat there for the whole time with a weighted blanket and then every time after that apparently, he went for that. He just said it helped him relax and kind of helped ground him as well, and the rocking chair as well - he was into that. (SM10, Site4)

While the accounts contained some ideas about the applicability and acceptability of the intervention, there were very few concerns about negative effects of sensory modulation itself. Some service user participants did experience unpleasant or agitating sensations if the equipment or room were not set up according to their preferences. For example, some found the massage chair uncomfortable if the pressure was set too high and the coloured lighting was over stimulating for several service users.

One significant concern expressed by a service user and echoed by a staff participant was the potential of becoming so relaxed and 'opened up' that the experience felt unsafe:

Then I found I was relaxed, and I was starting to freak out. It relaxed me too much, and was overwhelming with more and more thoughts. It opened up my whole being up to more, well, jabs...it heightened my senses too, freaking out, not in a positive way... [I was] more aware of...what was going on within me. (SU17 Site4)

Here the calming effect of the sensory intervention was compromised as the participant's relaxed state created space for a torrent of thoughts and feelings that she did not feel able to cope with. A staff member's account reflected this experience as she described how the sensory room and equipment had an escalating effect for some service users:

People have gone in there... and after a couple of minutes have become very tearful and said that they can't cope with being in there. I think what happens is that it brings up memories, and they end up with racy thoughts about what's been going on for them, and recent events that have brought them to the ward. And so that stimulates those thoughts, and they become quite distressed about it. (SM14 Site4)

While not a widely reported phenomenon, these accounts suggested that sensory approaches had the potential to draw service users' attention to negative thinking or difficult life circumstances, leaving them feeling vulnerable and at risk of increased distress and agitation. Similarly, there was potential for specific sensory input to place people in a vulnerable position when it was associated with past trauma. These issues point to the importance of staff being present with the service users, understanding their trauma histories and supporting them to avoid triggers when choosing their sensory strategies.

While the potential for increasing arousal was highlighted in the preceding accounts, overall the views expressed say the benefits of a sensory modulation approach outweigh the risks. The accounts provide practice-based evidence that sensory modulation had a calming effect and was used successfully in the de-escalation of distress. The approach was perceived to be effective in the majority of times it was used and was viewed as beneficial for people experiencing a

broad range of symptoms. Staff interviewees described variations in the use and outcomes of sensory modulation, but there was evidence that the outcome of using sensory modulation was determined by individual service user factors such as self-awareness and self-regulation skills, as much as clinical presentation.

4.2 MECHANISMS FOR CALMING

The following section outlines themes related to the processes at play during sensory modulation use. The analysis shows the variety of ways in which the approaches were experienced as calming and highlight the particular mechanisms that combine to support the reduction of distress, development of interpersonal connection and increased self-management. Excerpts from both service user and staff responses are provided to illustrate each of the themes.

CREATING A SENSE OF SAFETY

A key theme for service users was that having a dedicated space for calming was an important aspect of sensory modulation. Time away from the noise, activity and demands of a busy ward provided a sense of refuge and safe retreat, as shown in the following comment:

For me, the most helpful was that opportunity the sensory room gave me to have a quiet, relaxing space on the ward...it's a safe space... (SU13 Site4)

The room was perceived as being less clinical and less prone to interruption than other spaces on the ward, including individual bedrooms:

The ward's very noisy and you don't get any quiet space. I suppose it was an uninterrupted space as well. Like, you could go into the sensory room and you could almost be guaranteed ten minutes where you are uninterrupted, whereas, in your room that could be interrupted at any time. (SU1 Site 4)

However, a further excerpt suggests that the significance of this quiet private space was not always recognised by staff:

I escaped the ward...because it's too noisy. So, then you get in trouble when you're caught and brought back, but it's like 'well it's too noisy, can you not take me to the sensory room just to have that space, just to have that quiet in my head'? But for me it wasn't used like that at all. (SU1 Site4)

For many participants, being wrapped up in a soft or weighted blanket, or nestled in a bean bag, also added to the sense of comfort, as shown in the following excerpt:

I used the weighted blanket, and it reminded me of when...I was wrapped up as a baby...they used to really wrap up babies ... The weighted blanket just gave me a sense of protection and safety. (SU13 Site4)

The service user accounts suggest that having the opportunity to remove oneself from potential threats and intrusions and provide one's body with a sense that it is secure, appears to be an important element for calming in times of distress or agitation.

Staff accounts also highlighted the value of having a dedicated space away from the stresses of the ward. One stated:

I think for them it was a lot about kind of removing themselves from a situation that they found stressful and letting their mind kind of focus on something else (SM8 Site1)

Staff also saw the development of a safe and calm space as key to the implementation of the sensory approach:

The benefit? For me, the biggest one is that they've got another option. It's another space on the ward, 'cause we don't have many spaces that they can be, other than their room, which is private. But everywhere else can be busy and kind of unknown in terms of who else will be in that space, and how noisy it will be. So, the space itself is a calming sort of place to go. (SM8 Site4)

When discussing important considerations related to sensory practices, one staff member emphasised the importance of preserving this space:

Well I just think having that space, having that time and having that sort of space really respected and recognised as a space that you don't invade... (SM5 Site1)

This and the previous excerpts suggest that staff have an important role to play in respecting and protecting time and space away from the busy ward environment. When service users believed they would not be interrupted or harmed in anyway, a sense of surety was created and the sensory room was experienced fundamentally as a place of safety.

SOOTHING THROUGH THE SENSES

As well as providing a space to withdraw to, the room and sensory equipment had the desired calming effect for the participants when it was experienced as soothing. Several service users described how using the sensory tools in a safe, quiet space reduced anxiety and distress: *"It's positive, calming, soothing, slowing down of racing thoughts..."* (SU12 Site4). The texture of a soft blanket, regular rhythm of the rocking chair or relaxing music, stroking a weighted toy animal and looking at a peaceful scene on a DVD are all examples of ways in which service users described being comforted or soothed. For example, one participant recalled the soothing effect of coloured lighting on the walls:

I remember being really, really emotional and going in there and sort of calming down. Just, looking at the colourful walls in there with the lights off and that, it made your mind feel at ease. (SU5 Site4)

Another recalled the positive effect of music:

I was in a really bad place at the time, so it was kind of calming, like it's quiet but soothing, you know, with the music? (SU6 Site4)

The soothing effect appeared to relate to the easing and comforting of both mind and body. Staff members also reported this effect in their accounts:

I've had one client who was incredibly emotional, and to the point where she was hyperventilating. Being able to use a massage chair, and I guess the warmth of the room, and a blanket, and just let her talk... I think the environment just allows people to soothe.... (SM9 Site4)

The participant accounts suggested that soothing involves a movement from mental and physical harshness and speed, to a softness and slower, rhythmic pace, characteristic of the body's physiological rhythms in a relaxed state.

DISTRACTING ATTENTION

Distraction was also described as an important aspect of the process for people experiencing anxious thoughts, urges to self-harm, delusional ideas and overwhelming auditory hallucinations. For example, one participant stated:

I get voices in my head, so when I was in the room I could kind of, not switch them off, but concentrate on something else, and [it] kind of relieves the tension. (SU1 Site3)

Service users described aspects of the sensory environment as well as engagement in a variety of activities as useful distractions, both within and outside the sensory room. One found listening to music and sucking sweets helpful:

I liked the sounds, different noises as a good distraction. Another good distraction was the lollies as well. At home I use them quite a bit now. It's a really good distraction, especially if it's like a hot peppermint. (SU4 Site4)

Another participant found popping plastic 'bubble wrap' packaging to be effective, while others blew bubbles, did plastic maze puzzles, kneaded play dough, coloured pictures and played knuckle bones. These activities demanded varying levels of focused attention and the type of distraction required differed between individuals based on sensory preferences, level of distress, ability to concentrate and the symptoms being experienced. For instance, the repetitive sound of waves distracted attention from anxious thoughts for one person, but someone experiencing auditory hallucinations preferred louder music with lyrics to help her focus on something other than the voices in her head. Distraction was significant because it refocused service users' attention away from negative thoughts, feeling and behaviours, while their physiological and emotional arousal subsided as staff and service user accounts show:

You know, with paranoia with the music that's really quite good, as it takes them right away. Just music, it can be any music, depending on where they are and what they prefer. (SM2 Site2)

...then you were in a room and you've got things distracting you... usually for me, eventually it [the agitation/distress] passes, it can just take time... (SU3 Site4)

In addition to the effect of reducing distress, the refocusing of attention through distraction was reported to be a mechanism for the prevention of further escalation, as illustrated in one staff account:

...she had intrusive, negative thoughts of herself and when it became overwhelming that's when she started scratching herself and stuff. So it was getting her to... like, bringing that anxiety and distress down enough so she could then carry on with distractions, so she wasn't sitting there ruminating and thinking... (SM2 Site4)

This account suggests that the escalation of distressing ruminations was avoided through active engagement with distracting activities. It also states that other mechanisms were required to reduce distress levels before the service user could "then carry on with distractions", reinforcing the need to use distractions according to an individual's particular distress level and need. While some distractions would be too demanding and potentially overstimulating for people in highly aroused states, the following two themes highlight mechanisms for calming that require less focused attention and support de-escalation through more passive means.

STABILISING THROUGH THE SENSES

While some sensory methods distracted attention away from distressing thoughts, feelings and perceptions, some also had a stabilising and integrating effect that was very important to service users. When describing their experience many participants used terms such as 'grounded', 'anchored', 'centred' and 'collected'. The descriptions reflect a movement from scattered attention and emotion to being attuned to the present and focused on their bodily sensations and the immediate environment. For instance, one participant stated:

It was good for dealing with situations where I was starting to feel somewhat distant...it was really good at helping ground me. It would get me back to the present...” (SU2 Site4)

Another reported:

It’s sort of like focusing on the here and now, and what’s most helpful... (SU14 Site4).

The effect of being brought back to the present time and space lead to a sense of stability as well as integration, as shown in further service user accounts:

I’m a real racy person, so my mind’s always on the move, it may not even be in the realm of reality, there are twenty million things to do and I wanted it all done yesterday. So for me, the chair centred that, you know? I stopped being racy for even just five minutes. I was actually still, you know, and centred and focused. Whereas usually, I’m not like that at all, and when I get unwell, it just magnifies twenty million times, so I’m never resting, you know, and I don’t sleep. So, to even be centred for five minutes is a really big deal. (SU14 Site4)

I really liked that feeling of being in the chair, so I got into there and it had that focus of actually centring me... I actually found, that sort of made me feel a lot calmer, but... you know, alive and not unconnected... shutting off senses that were too activated and not helpful. (SU11 Site4)

These descriptions illustrate the shift from a sense of disconnection and being overwhelmed, to connection and being “centred”. The participants’ focus moved from overwhelming thoughts and visual and auditory input to their somatic or bodily senses. Receiving feedback about one’s body through strong physical sensation appeared to be particularly important as a stabilising mechanism. Participants who had experienced psychosis, elevated mood, dissociation and overwhelming anxiety all reported that the grounding and stabilising aspect of sensory modulation was a significant factor in assisting their de-escalation. This was also expressed by people who experienced urges to harm themselves:

I’m a self-harmer from way back, and that was one of the behaviours that would show when I’m under extreme stress. So, very aware that I respond to physical sensation and I found the massage chair was my favourite actually. It was brilliant and I spent quite a lot of time sitting in that chair... I found sitting on the really awesome rug in there with really deep pile... again; I just find the physical sensation is a really good way to ground myself. (SU2 Site4)

Staff accounts also reflected the potential for the sensory approaches to shift individuals from a ‘scattered’ or ‘disconnected’ state to one where they could focus, think more clearly and process situations or concerns:

[It] calmed her down so that she could focus; you know we could talk about what happened logically.” (SM1 Site3)

The stabilising or grounding effect of somatic sensation was one of the strongest themes in the participant accounts. The findings suggest that sustained feedback through internal and musculoskeletal sensation helped service users to ground themselves in their body and to be more present in both time and space.

CREATING POSITIVE ASSOCIATIONS

While sensory modulation often brought the participants’ focus to their physical body and the immediate external environment, service users also had experiences of being transported to another time or place by specific sensory

input. Particular sounds, smells, sights or physical sensations were sometimes associated with positive memories and familiar events or places as illustrated in one excerpt:

I wanted the sound of the beach, of the waves, so I had that. And the smell of the hand cream reminded me of sort of sun block... and so I was taken back in time to good childhood memories, felt like I was at the beach, tension was relieved and [I was]at peace. (SU11 Site4)

It appears that the participant's embodied connection with another time or space provided relief from stressful situations or thoughts in the present. In another example, a service user described how sitting in a rocking chair and stroking a weighted toy animal made her feel like she was at home and this association was reassuring: *"It centred yourself, and you know, just the stroking just sort of calmed you down – 'yeah, you're at home.'"* (SU13 Site4)

The mechanism of positive association involved a direct emotional response to specific sensory input. The shift of focus away from the present to feelings, internal images and memories of other times and places distinguished this aspect of sensory modulation from other forms of distraction, which were based in an external current reality or required cognitive engagement.

CREATING A SENSE OF CONTROL

Another significant theme was the increased sense of control created through the use of sensory modulation. Service users found that through the soothing and stabilising effect of sensory modulation they were able to think more clearly and regulate their emotion:

...to be mentally in a better space, you know? And the control that comes with that - a sense of good control.... I had control over what I wanted to feel. I knew that was going to make me feel good and relaxed (SU14 Site4)

They also found it could influence their immediate environment as well as control un-useful behaviours::

I found it really good sort of to be in control of the environment. Like, the sound...the lighting, it was just being in control of things around you, kind of helps to calm you down (SU11 Site4)

It should absolutely be something that's available, because I think that it helped me get the behaviours under control as much as anything and had I not... it could have been a lot worse (SU2 Site4)

Staff also recognised the sense of control that the sensory approach could facilitate. For example one participant described working with a woman who experienced distressing auditory hallucinations:

She found that really relaxing for her, so you could just take her in there for 20 minutes. It'd be enough to settle her instead of always having to utilise the PRN and spending a lot of one on one time..., If we worked with her early enough then she was able to make her own choices... like 'what are you going to do now'? And she'd quite often keep herself distracted and that. ...It was enough to just bring down the anxiety and make her feel more in control. (SM2 Site4).

This account highlights a shift of control from the external, staff feeling they needed to do so, to service users themselves owning it through the use of the sensory modulation. By inducing a more relaxed state the sensory approach increased the service user's sense of control and enabled her to actively regulate her own agitation. Several participant accounts suggested that institutional restrictions and distressing symptoms resulted in the sense of loss of

control over their bodies, minds and environment. The sensory approach provided a space and tools to support service users to regain some control over these factors.

SUPPORTING EXPRESSION AND RELEASE

A further sub-theme within the participant accounts was the opportunity for releasing mental and physical tension and expressing emotion within the safe confines of the room. Several service users talked about feeling able to 'open up' and talk with staff because of the trust and relaxation that was established in the process of the approach, as the following statement indicates:

It kind of calms you down enough to allow your feelings to come out instead of holding them all in... (SU6 Site4)

Staff participants found that the dynamic of increased calm and connection lead to the opening up of dialogue and expression of deeper underlying issues. Several reported that service users had disclosed histories of trauma within the sensory room, some for the first time:

One of the clients is quite psychotic, was wanting to leave [and] all distressed from what she's experiencing, those hallucinations. I looked after her quite a lot, a number of admissions. But she told me all the family history - abuse from parents, because dad was quite psychotic... she told me she thinks her mum's got personality disorder, not helpful for her childhood. So all this stuff, I sort of know her quite well. [I was] fairly surprised, [I had a] very sensible, very calm conversation with her... I've looked after her for years. So all that stuff I didn't know... it was quite a traumatic childhood - I wasn't aware. (SM5 Site3)

I got him in the room, and after about ten minutes, he just opened up and just started telling me about a whole load of things that had happened in his life. He told me about his voices, he was telling me when they started, how they made him feel, things about his family, and the more he talked, the deeper he went....(SM10 Site4)

While access to the sensory room and equipment opened the opportunity for the sharing of deep emotion and thoughts, to maintain trust staff needed to feel comfortable in responding to such situations when they arose. In addition to emotional release, service users reported their physical pain being relieved and the exertion of pent up energy. For example one stated:

It was just somewhere where you could go and exert energy and not be judged for it ...to go and sit in a room and jiggle and squeeze a ball and throw a ball in the air is like, that was okay, but pacing the corridors at 4am wasn't. (SU1 Site4)

As well as providing a sense of safety and soothing, the sensory, the room and equipment appeared to support service users to release built up emotion, energy and physical tension. The accounts suggested that these forms of expression and release were not always possible in other parts of the ward, due to perceived lack of privacy and safety, lack of one to one time or restrictions on particular strategies (such as pacing at night). The catharsis created by the release and expression was another significant calming mechanism in the process of the sensory modulation approach.

Analysis of the collected accounts has provided useful insights into the mechanisms that worked together to reduce service user distress and induce calm. Understanding the processes of creating a sense of safety, soothing, distracting attention, stabilising, creating positive associations and a sense of control, as well as supporting the safe release of emotion and physical tension is vital in the effective application of sensory modulation. The analysis now turns to the implementation of the sensory modulation approach and explores the practice considerations that arose within the participant accounts.

4.3 IMPLEMENTING SENSORY MODULATION

Both staff and service users had clear views about what facilitated implementation of sensory modulation and what reduced its efficacy. Participants were also able to articulate a range of considerations and potential improvements for future practice. One staff participant emphasised the difference between using the room as a generic place for time out and using it as a therapeutic medium:

I mean anybody can go into the sensory room and turn the massage chair on for 15 minutes, but there's a difference between doing that and actually using sensory modulation as a de-escalation strategy and as a therapy. (SM6 Site3)

With this distinction in mind, the following discussion highlights themes related to the facilitators, barriers and practice considerations important for maximising the approach's therapeutic potential. Firstly, the discussion looks at considerations related to the sensory room and equipment, then further aspects of practice are discussed, followed by a review of wider organisational factors.

THE SENSORY ROOM

As the earlier findings show, having a dedicated sensory room on a busy ward was significant because it provided a separate space where individuals could control their environment, allowing uninterrupted time for processing emotions and talking to staff. The sensory room was a tangible reference point for staff and service users to anchor their use of sensory modulation. The location of the room was a key consideration in the participants' feedback as the placement of sensory rooms on open wards limited access from the high needs areas. This meant that service users that needed sensory modulation the most were not able to access it, or that there were concerns about risk if service users were moved out of the secure area to use the room. Finding a location that was relatively quiet was also a consideration as some participants found that noise around the room was a barrier to inducing a calm state.

Room size was also an issue, with participants suggesting that a balance must be struck between the room being large enough to comfortably accommodate the storage and seating options required for a fully equipped room, while small enough to maintain a sense of safe containment. Feedback suggested that a converted single bedroom was not big enough for this purpose. Along with the location of the room, the size and shape of the space is a key consideration in ward design.

Another common theme was the perception that despite being a clinical practice, the environment used should invite relaxation and therefore needs to be as 'homely' as possible. As one participant pointed out, a reclined massage chair in a stark pale room can engender more anxiety than relaxation, if it resembles a dentist's chair. Ensuring a warm and inviting space is created while avoiding over-cluttering, was a consideration mentioned by several staff participants. The use of soft furnishings and images on the walls, arranged in a way that was 'cosy' and that 'flowed' was seen as important. The provision of adequate, secure storage was highlighted as a way of avoiding too much visual clutter and keeping items from going missing. Some participants suggested that the use of colour, sound, images and objects from nature were important in removing the clinical feel of the room and inducing positive associations. Having the option of natural light through an external window was also viewed as beneficial.

While participants did not generally perceive anything culturally inappropriate in the sensory modulation approach per se, there were suggestions as to how specific aspects of the room and equipment could be made more relevant and acceptable for people of different cultures. One staff participant emphasised that from a cultural and spiritual perspective, having the room blessed was important:

Your biggest thing would be to make sure the room was blessed, because people leave a lot of emotional garbage in there. (SM5 Site4)

Another staff participant highlighted the need to make the room feel welcoming and safe for Maori service users, by including culturally significant objects or decorations:

But just something that people can look at and just think oh, you know, 'I'm safe', and 'they've thought about that'... important enough for them to put something that will remind them of who they are. I don't know about a carving, but there are lots of different patterns that are universal Maori patterns, that have little stories of strength, and not giving up, and all of those things in the pattern. (SM15 Site4)

The accounts suggest that in times of distress and disorientation, having objects and sensations as reminders of identity and belonging is reassuring and contributes to a sense of safety. The principle of incorporating culturally relevant symbols and objects within the room would hold true for a range of service user ethnicities, but may be a particularly important consideration for Maori and Pacific Island people because of their over-representation in seclusion and restraint statistics.

THE SENSORY EQUIPMENT

Despite the individual nature of sensory sensitivities, clear patterns emerged in the preference for certain sensory items. The massage chair was often the first piece of equipment service users trialled, and was also the item used most often for reducing distress. Due to this popularity, there were ample descriptions of how the chair was useful in the service user accounts. All of the mechanisms for calming that were highlighted previously were evident in the descriptions of massage chair use. The chair was reported as working to facilitate relaxation and release of tension: "I went in there and I had a real bad headache or, I think my feet were sore and that and just using the massage chair really helped and it made me relax" (SU5 Site4); regaining control: "I found the massage chair was really brilliant... it was just being in control of things around you, kind of helps to calm you down" (SU7 Site4); and distraction: "I suppose...as they say it's a distraction and it took your mind away" (SU7 Site4). However, for many the chair was not so much for relaxation but purely for stabilising and grounding through the sensation of physical pressure:

I'm probably not the person to speak to from the relaxing point of view, but again, you know for me it was about the physical sensation...for me it's very tactile and physical. It had an inflation squeeze on your calves, and again because I'm very much about physical sensation, I'd have the massage chair set quite hard. I used the calf squeeze, and again I'd have that set sort of as tight as I could possibly tolerate. They said to me 'almost nobody else uses that'. I said, 'well I do. I like it. It works for me. (SU2 Site4)

This excerpt reinforces the individual nature of sensory preferences and the importance of strong physical sensation for some people in providing a stabilising influence.

Another feature of the massage chair that was perceived as comforting was the warmth that the seat provided:

The other thing I found was the seat - it had a warming function as well...there's something about hopping into bed that's had a hot water bottle or an electric blanket on when you're really, you know what I mean? (SU2 Site4)

It was clear that the massage chair needed to be used with consideration to each service user's sensitivity to deep touch. As one respondent who found the chair useful stated:

It had to be set to the right thing, 'cause if it wasn't right, it would get me more agitated. (SU7 Site4)

Some service users found the deep pressure too much to tolerate and used one of the other seating options or simply sat in the chair without using any of the massaging functions. For people who were frail, had little muscle and fat, or had musculoskeletal problems, the chair was contraindicated or needed adaptation by placing thick blankets over the chair with the strength of massage set low. In general, the staff members were wary of allowing people to use the massage chair for extended periods of time and typically set the timer for 15 minute periods. Other concerns involved the size and colour of the chairs. All the sites had black leather massage chairs, which tended to dominate the rooms because of their size and colour. This was particularly so when extended in a reclined position. Some service users felt uneasy when first seeing the chairs and it was recommended that chairs be left in the upright position when not being used and covered with a softer and warmer coloured blanket.

While the other forms of seating in the room were not mentioned as often, several service users reported them as being very useful. The soothing of the rocking chair became a focal point for some:

I tried the rocking chair which I kind of fell in love with. So I kind of found my little niche, my little part of it that I enjoyed.(SU4 Site4)

However, a common complaint was that the wooden seat and back was too hard and cold, and while some service users used cushions or blankets to soften the chair, ideally the chair would have more padding or cushions attached. One staff participant recommended the use of linear 'glider' chairs to avoid inducing problems for people with vestibular sensitivity. Some service users found the beanbags useful for enhancing their sense of safe comfort, something they could sink into to get a sense of being 'held' and secure.

Other commonly used items were the weighted blanket and soft blankets. The weight was an important mechanism for providing a sense of reassurance and stability, as shown in the following excerpt:

When I was more anxious within myself I'd use that 'cause I knew that was very grounding... just with that extra weight just feeling a lot more settled with having something heavier just lying there... (SU16 Site4)

Additionally, being wrapped up in both types of blanket also offered a sense of safe containment:

A lot of people like the weighted blanket, they seem to tell me about the weighted blanket, and sitting on the bean bag. A lot of people like that whole thing of being hugged. (SM5 Site4)

The weighted animals combined the characteristics of both blanket types with their weight and soft texture. Some participants associated the experience of stroking a weighted animal with their own pets and being at home. Others found the weight grounding and the rhythm of stroking the soft texture soothing.

The 'stress balls' and other items such as play dough or 'slime' were used either to distract, if service users passed it from hand to hand and fidgeted with it, or stabilise and calm if deep pressure was applied through squeezing it.

The participant accounts suggest that the aromatherapy oils were not used as often as other items. Barriers or issues with using the aromatherapy oils were not clear in the data, but it is possible that the oils were not re-stocked or it took too much time to set up and heat aromatherapy oil on an electric burner in a 15 minute session. However, the following statement points to the benefit of aroma in creating a separate space from the rest of the ward:

I can't recall if there was a nice lavender smell or something as you walk in the room. It sort of sometimes smelled like you were still on the ward, you know, that same hospital feeling. (SU7 Site4).

Smell can have an immediate and powerful effect on emotion and the use of scented spray or oil to meet individual sensory preferences may have been an under-utilised tool.

For most service users, being able to choose audio and visual input was seen as helpful in providing a sense of control. Many participants simply wanted the lighting low and did not use the option of coloured lighting, as the following excerpts illustrate:

I quite liked it. It was quite dull. It wasn't dark, but it wasn't bright. It wasn't hospital lighting, because in your room there's hospital lighting, which is quite bright and it's not natural. So, yeah it was just right. (SU1 Site4)

I don't even know if the lights still go, I'm not sure, but they weren't ever as popular. We usually pull the curtain and shut the door; prefer dark, well not dark but darkened. (SM1 Site2)

Participants suggested the inclusion of a dimmer switch on the lighting so that individual needs could be met more effectively.

Service users that chose to utilise the coloured lighting found it helpful in shaping the mood of the room and in creating positive associations, such as the connection of a sunset with a red wash. However, the use of coloured lighting required some caution, particularly if the colours could be set to change rapidly. Several participants commented on the possibility of escalating arousal or triggering epileptic seizures through the misuse of the lighting:

I don't like the flashing lights, the LED lights, that's what really elevated my lady today, the changing colours (SM4 Site4)

Some service users had negative associations with certain colours, such as the connection of blood with red or sadness with blue. These issues highlight the need to consider how coloured lighting is used and what the contraindications are for people who may easily become highly distressed.

Music and other recorded sounds were found by several participants to be helpful for soothing and distraction and often provided positive associations with a different time or place:

It just helped with the deep breathing and to ease the thoughts going through the mind 'cause focusing on the music kept me away from what was going through my mind, yeah, good distraction.... it was very regular yeah...the sounds took the mind to other places (SU16 Site4).

Because of the strong associations and range of tastes, choice seemed to be particularly important with music. Some found the distraction unhelpful at a time when they needed to collect their mind and body: "I actually did not use music or the sounds; I found them quite distracting" (SU5 Site4); and others could not identify with the range of sounds provided:

I found that I tended just to take my own MP3 player in there, because my taste of music doesn't sort of extend to dolphin sounds and pretty rainbows. For me, the massage chair and some good loud hard rock in my ears did it. (SU3 Site4)

While some staff and service users expressed concerns about the value of specific lighting and music equipment, overall the findings indicate that what was helpful was having choices available, and understanding how different options had the potential for calming or increasing arousal.

In general, the findings indicated that the acceptability and relevance of the equipment offered could be increased if a larger range of options were made available. Participants suggested that the acceptability of the equipment for males and people of different cultures could be improved by incorporating elements such as relevant music, suitable activities and images on the wall and in photographic books as well as appropriate designs on furnishings and blankets. For example, staff members suggested incorporating images of surfers, a punching bag for release of energy and electronic video games for distraction as more relevant tools for males. Encouraging people to bring in suitable items of their own for use in the room or wider ward environment was also identified as way of increasing individualisation of the approach. However, novel items and activities should be introduced with an understanding of their contraindications and likely effects on distress and, particularly their potential for calming.

4.4 PRACTICE CONSIDERATIONS

ORIENTATION TO THE ROOM AND EQUIPMENT

The way in which staff supported the use of the room and equipment and were present alongside the service user, clearly affected the outcomes of the approach. A common theme in service user accounts was the need for staff members to provide a clear orientation to the room and equipment. For example, one participant stated their most important facilitator as:

...having a staff member that could explain everything about the room, meaning the equipment in it, you know, what it's there for. (SU12 Site4)

Unfortunately, some participants had the experience of being oriented by staff members who did not have the time to do it thoroughly or were left in the room to experiment for themselves, which lead to uncertainty and increased anxiety:

[You need] someone that can explain it to you before you go into the room... you've got those options, or those choices, instead of just being put in there and then the chair's up too hard or, 'cause you're taking the time away from them as well, and that's what they get shitty about, 'cause they've got to go and do other things. But it does help, you know, if they did it properly in introducing you to the room, in a more positive way instead of just throwing you in there and sink or swim, you know? (SU12 Site4)

Some participants also stressed the importance of having an orientation provided routinely and as soon after admission as possible, ideally at a time when the service user was not already upset. These findings suggest that investing time to familiarise service users with the sensory space and equipment will increase their comfort and confidence in using it when they need it most. One site found that a group format could be used in providing an initial orientation to the sensory modulation approach, enabling learning and experiences of coping through the senses that could be shared. It was also suggested that posters with simple information about the sensory room and ways of calming through the senses could be placed in open areas of the ward.

IDENTIFYING SENSORY PREFERENCES AND STRATEGIES

Closely related to the need for orientation was the need to support service users in trialling the equipment and to identify their preference for certain sensory strategies. For example, one participant found that being asked about her interests and positive associations helped her to choose relevant pieces of equipment.

Having a staff member that asked you what you liked, I found helpful. Things in general like the beach or sports, that you could then work from there as a building block, and then who could suggest how the equipment could be used for some positive scenarios. That's why I had a good experience, because [the staff member] did that. (SU12 Site4)

The process of identifying sensory preferences and sensitivities seemed to be largely through trial and error as well as through service users drawing on their life experience. For instance, one person knew even before she tried the massage chair that she would not like it, due to her particular sensitivities. The practice of recording and documenting service user responses to different equipment appeared to vary. Methods included, keeping a record for each service user filed within the sensory room's locked store cupboard, keeping a record within the service users' general file, and some sites did not report having a system for recording preferences. None of the participants mentioned that they had completed a formal assessment process such as the 'Adult/Adolescent Sensory Profile' (Dunn, 2002) when identifying their sensory preferences. A possible explanation for this is the difficulty people using acute mental health services might have in concentrating to complete the list of self-report items. However, this or any other reason was not clear from the staff or service user accounts. Nonetheless, the practice of thorough orientation and trialling the equipment appeared to be vital to the success of sensory modulation. The identification of effective strategies not only facilitated de-escalation on the ward; it also supported self-soothing in life outside the hospital. The findings suggest that sensory triggers, early warning signs, preferences and strategies should be incorporated in service users' recovery plans and advanced directives.

PRE-EMPTIVE AND TIMELY USE

Another important practice consideration highlighted by both staff and service users was the importance of using sensory modulation for the prevention of escalation as much as de-escalation. When asked what sort of situation the approach was most useful for, one service user participant stated:

Definitely at that onset of an anxiety attack or the onset of starting to feel your mood really dropping, which is a timing thing. It may not always be possible for the staff to get there at that particular moment...I think when they could, I may have been able to avoid PRN all together. (SU4 Site4)

Other service users reported that there was a point where they would be too distressed to sit and use the passive sensory strategies for de-escalation, and more active strategies were used such as distraction or going for a fast walk within the hospital courtyard. Several staff accounts also described the importance of timing and pre-emptive use, as the following illustrates:

I think if the person is intercepted at the right time it's perfect. I've never known of a negative actually. Sometimes it's planned into their day, which once you know your person and if I've met so and so today and I think they could benefit from a bit of that time, just me and that person, I will say to them that either this afternoon or tomorrow we'll make time for the sensory room. Other times it evolves because of what you're learning from them. (SM3 Site4)

In this account the staff member went on to describe what can be learnt from talking with service users about their experiences of agitation and distress. An awareness of individual needs is required if the approach is to be used pre-emptively and as a preventative measure, as illustrated in a service user's account:

I guess it's a kind of individual thing and I guess you kind of have to hope that your nurses or whoever kind of knows you enough to know whether or not they think it's a good call. Because I've often found that I often wasn't in the space to actually ask for the room myself, so it was really helpful when someone would suggest it. (SU3 Site4)

It seems that an important aspect of using a sensory modulation approach is for staff to recognise the need for sensory modulation and prompt the service user as early as possible. Participants also reported that some service users developed their capacity to recognise their need for the room early, through experience with sensory modulation while on the ward. In order to use sensory modulation in a timely manner staff also must be prepared to use it as and when it is required. One participant highlighted the need to ensure that the room and equipment is ready for use and others are informed that the room is being used:

You kind of need to just duck in the room before you go in there to check what state it's in.... I don't like walking in and it's all pitch black, and it's not very nice for the client, especially if that's the first time they've seen the room. So I always open the curtain or turn the light on, and I just like to know that everything's kind of you know, in the right place before I go in there, 'cause I think that can put people off. Yeah. So, setting the room up beforehand is definitely important, and letting someone know that you're going into the room, another staff member will know where you are. (SM8 Site4)

Another consideration is ensuring that both staff member and service user have enough time for a session prior to entering the room. Agitation could be increased if service users or staff members are called out for appointments or other tasks. A staff participant suggested that if time is limited, then this should be established prior to having a session.

If you're short on time, let the client know how much time they've got at the start. I've had a few that, 'Hey, we've got to go now' and they're going, 'Oh not quite ready.' Yeah, making sure you have enough time. (SM16 Site4)

Other respondents stressed that after each session the room needs to be left with equipment stored and accounted for, to ensure readiness for the next user. The findings suggest that sensory modulation is most effective when used pre-emptively, and timely use requires awareness and the preparation of staff, service users and the room itself.

SAFETY

Throughout the interviews, participants identified safety as one of the primary considerations with regard to the implementation of sensory modulation. Ensuring both the emotional and physical safety of service users and staff was a common concern, as illustrated in the following account.

Safety's got to come first, for the client as well as yourself. Like the triggers they may have which you don't know [about], but could be something really small, but we just don't know it. Safety and procedures. Keep the [staff] safe, letting someone know where you are. (SM2 Site2)

From the staff perspective, the concept of safety was related to a number of key issues associated with risk management. One participant identified comprehensive risk assessment skills and processes as being one of the foundations to ensuring successful implementation of sensory modulation. In general, risk management for sensory modulation involved the same process as any situation of potential risk. For instance, one staff participant stated:

I'm quite big on safety, so I'd be quite concerned about taking anyone who was a) unknown and b) agitated, in there by myself. (SM4 Site4)

This statement reflects two common safety considerations identified by participants when making a decision about the suitability of using the sensory room in particular. The first is knowledge of the person using the room, including

any trauma history, previous violent or destructive behaviours, symptoms, triggers, early warning signs, sensory preferences and their safety plan if they have one. The second consideration is the person's current level of agitation and the clinical judgment required to decide how safe and useful using sensory modulation would be, based on relevant individual and circumstantial factors.

Several staff members noted the importance of letting colleagues know if the room was being used, and when there were particular concerns, an extra staff member waited in the room or stood outside the room until things were settled. Personal alarms were also taken in the room to ensure colleagues could be alerted if necessary. Some staff made judgments about potential risk that lead to altering standard practice to meet an individual need, for example, letting service users have their own space:

I think we're always supposed to have a staff member in there but if it's someone we're comfortable with using the room and we find it's safe, there's a big window so sometimes it's more effective for us to be outside that window so that person can have some space to themselves. (SM8 Site1)

However, there was clearly a point where staff recognised that sensory modulation in a fully equipped sensory room would be unsafe:

When someone is that heightened to the point where we're looking at seclusion, which is our very last option, and something that we don't like to do, that's where I think the risk is far too great to take someone...into a room on your own to try and de-escalate the situation. (SM14 Site4)

Service users also described that there was a point where their distress would be too high to use the sensory room safely. They were also able to identify their own risk factors including vulnerabilities due to trauma as well as potential for destructive behaviours and could name relevant strategies for when risk was high:

I don't think [the sensory room is] helpful if you're really angry because you're likely to turn around and smash the equipment. Yeah for me in those times it was better to give me something out of the room like a ball or something and take it away. If you're really angry... it's really hard to try and sit there and watch a DVD, you know, when you're really pissed off, you're likely to throw the thing on the floor. (SU3 Site4)

This account highlights the need to not limit sensory modulation to a fully equipped sensory room, and to consider ways of utilising some of the basic items in more secure environments.

The findings suggest that safety is ideally addressed as a partnership, where service users are supported to bring their own self-knowledge to safety planning and staff are able to combine this knowledge with their own observations and understanding of the person. Having a staff member who knows their particular sensory needs and strategies can make a significant difference to service users in times of distress. Service users stressed that staff knowing and utilising their individual strengths and preferences was equally important as knowing their risks:

[Service users] are different, and we're all in there for different things - depression, suicide, schizophrenia, you know, bipolar, all sorts of different things. So, I reckon that when you're a nurse, you know some of the history on the patient, so you kinda know what they're like, and what kind of things might set them off or not. I think they already sort of have that information, so it's a matter of utilising positive things and reinforcing positive things. (SU7 Site4)

It also seems that where possible, pairing service users with staff members who they were most comfortable with can enhance the safety and efficacy of sensory modulation. For example, some staff and service users did not feel alright about being in the intimate space of the sensory room with a person of the opposite gender, and this affected their sense of safety. While not mentioned in participant accounts, it is also likely that staff members who are sensitive to and adept in meeting cultural needs would enhance the feeling of safety for some service users.

The potential for service users to experience an overwhelming release of emotion or negative associations with past events indicates not only a need for staff to be well matched and trauma informed, but also to take the introduction of sensory equipment slowly. If too many items are used too quickly the risk of elevation is also increased, as illustrated by the following account:

So it was just to try and distract her a little bit, but it actually just elevated her. I haven't really used it enough to be too familiar, but I remember we were meant to go through things that they'd use. She just wanted everything. She was turning everything on and really liked the lights in certain colours. So she was like 'get it on purple', 'get it on purple'. (SM4 Site4)

The findings indicate that by avoiding the use of too many items and introducing them one at a time, staff can reduce the risk of overwhelming the person and escalating arousal. In several accounts, reducing the input from the external senses (e.g. sight, hearing) and focusing on the items that provided deep pressure and regular vestibular input appeared to be an effective strategy in the first instance.

A further safety consideration is staff confidence in responding to the opening up of deep emotion and the revelation of past trauma. This situation clearly placed service users' in a vulnerable position and required a sensitive and validating response. Participant accounts suggest that acknowledging the emotion and experience and offering appropriate opportunities for addressing the underlying issues outside of the sensory room was advisable. Staff also suggested that training related to responding to trauma disclosure would increase their confidence.

ENGAGEMENT WITH SERVICE USERS

As previously indicated, the connection between staff and service users is an essential component of sensory modulation. The value of even a brief period of undivided engagement should not be underestimated:

Having a staff member for 15 minutes in itself is like a big thing. You know, to have that human contact and that they can sit down and talk to you... and they do have time to show you what is in the room to use. (SU17 Site4)

Some important considerations for how staff should engage with service users in order to create connection and trust were evident in the collected accounts. The values and attitudes that staff members brought with them formed the foundation for effective engagement. Service users talked often about the importance of staff being authentically interested in their experience and committed to their well-being:

[What's useful is]...staff being oriented to, you know, the room and the person, and being there to be helpful, you know, to encourage, to utilise the space to be as helpful as it can to the person. (SU14 Site4).

Service users also emphasised the importance of being able to access support and guidance with regard to the use of the sensory room and equipment, as illustrated in the following excerpt:

It is about how you put the room across to the patient in the first place, if you can explain everything. If I was a nurse, I would say to someone...who may find the room beneficial, I'd say, 'This is your time, this is time for you, 15 minutes where you can talk or not talk about anything. We want you to have good experiences, so what are the things that you love doing and how can we make this a good experience for you'? And also ask them if they see anything that they don't like. So, having a helpful, encouraging attitude can help the patient to become more open, and when they become more open, then you'll know what they like and then building from that, they will be able to have more of a positive experience. (SU12 Site4)

This account also illustrates the need for providing service users with as much choice and control as possible and the leeway to explore their own preferences. This includes the invitation to talk or just sit in silence:

It's a space that other staff and people know not to enter either so... you can do that intense almost therapeutic stuff at the same time, if that's what they want. Otherwise you can just be there, but not be active. I always let the client direct that. Like, 'do you want me to help you to find ways to use it or do you want to find ways yourself and I'll just be here?' and they can decide. (SM5 Site1)

Service user accounts also suggested that being in highly distressed or agitated states resulted in sensitivity to staff actions, including those that showed that staff members were not fully present to their experience:

I quite like it darkened down and I found that as a consequence of that, the staff member tended to want to sit in a corner with a light source reading a magazine or whatever... [so] any way you could make the supervising staff member less intrusive..... again there were times when I sat there and had the odd chat to staff members, but most of the time... I wanted to shut some of that out to a certain extent, and yeah I don't know how you'd achieve that, but I did find that an issue at times. I think, again to be honest, once I'm grounded I become quite acutely aware of everything, you know, and having somebody sitting in the corner and sighing occasionally and looking at their watches regularly - not all, some of them are bloody brilliant, and others were just like 'actually I didn't want to be in here with you'. (SU2 Site4)

The disconnection created by some staff members' actions affected service user trust as well as their capacity to focus on the calming aspects of the sensory experience. Conversely, service users also described experiences where staff members were too intrusive while they were trying to relax, as one account shows:

I went in with a nurse, and it was awful. I got drilled, so, it wasn't relaxing. I'm sitting on the bean bag trying to use the stress balls, and yeah the line of questioning wasn't very relaxing. (SU1 Site4)

The service user accounts indicate that creating a space of safe containment can involve being present in that space, but not taking the space over with one's own thoughts, feelings or intrusive behaviour.

The participant accounts suggested that collaborative engagement was a key facilitator in sensory modulation practice. Staff reported that using the equipment alongside the service user enhanced their sense of connection, making the experience a shared one and allowing the modelling of a calm state. It seems that staff members who utilised an individualised approach took the time to identify sensory preferences and were present to the experiences and needs of service users, which was essential in the effective application of a sensory modulation approach.

SUPPORTING SERVICE USER SKILL DEVELOPMENT AND GENERALISATION

The last consideration for individual practice identified in the participant accounts was the facilitation of service users' skill development and generalisation. Both staff and service users discussed the value of learning new strategies

for self-soothing and distraction and for service users to integrate these into their everyday life. Several practices enabled this to happen, including access to and time in the sensory room:

Well it has, because half the sensory things I do now, I don't think I would have even attempted, because I don't know... I wouldn't have known how to use them. The sensory room teaches you how to start to use them, and then you build on that. (SU1 Site4)

Additionally, some staff members approached the process of using sensory modulation as one of active discovery and learning as well as simply a tool for passive de-escalation.

I found it incredibly useful and effective, when you found that right thing, and was able to explain to the client how it worked, and why. I think being able to explain... why it worked, which helped them recognise when they would need to use it again. So they can independently recognise that. (SM5 Site4)

As in any skill development process, service users needed to practice using the calming and distracting strategies in the right circumstances, which initially required prompting from staff members. Identifying sensory strategies that were mobile and worked in a variety of situations was also important in moving sensory modulation beyond the sensory room. At one site sensory modulation had been integrated into recovery and Dialectical Behavioural Therapy programmes where service users were supported to identify their sensory preferences:

We've used it in that way as an education tool for patients, for them to figure out what is stimulating, or what's alerting, and what's sort of calming for them. Yeah we would go there and we would have like a board, and we would talk about what we find calming and what we find alerting. Things that we might do to self-soothe, so when people are distressed and they're at home, they can think about things that they might do to make themselves feel [better] and then they will have some time to be able to use some of the things in the room as well. (SM9 Site4)

Staff at the same site supported service users to make their own 'sensory box' or tool kit, filled with individualised items for calming and distraction:

We've incorporated what they do in the sensory modulation, to the sensory box, so that people can make their own. You decorate the outside of the shoe box, you make it up yourself. We've got a set piece of paper that tells you how to actually make the kit up, and then we go and we encourage people to make their own. This is about keeping hope alive, so what we do is we make a picture of hope on the front of the box, and then what we do is we make up a sensory box, including things that soothe all your senses. (SM5 Site4)

Additionally, both staff and service users were engaged in finding ways to create their own sensory items on a budget. Making the generalisation of the approach affordable was a point highlighted by one staff participant:

We also need to make it low cost for consumers, because the actual logistics of trying to buy that equipment is too much. But to actually be able to make it yourself, or buy things from the 2 Dollar Shop... (SM5 Site4)

As the above account suggests, for some staff supporting self-responsibility and the tools for managing arousal and distress was a key concern in the application of sensory modulation approaches. The accounts confirm the need for services to use every opportunity to support people's self-awareness and self-regulation prior to and following acute episodes of distress. Providing service users and their families or whanau with group educational opportunities and

building the use of the sensory strategies into recovery plans were also suggested as methods of supporting self-management and development of useful skills.

4.5 ORGANISATIONAL CONSIDERATIONS

In the participant accounts, it was evident that the practice of sensory modulation was influenced by the broader systems and processes within each service. The staff and service users had clear ideas about what facilitated and impeded the implementation of sensory modulation at an organisational level.

SERVICE CULTURE

A number of staff and service user participants talked about the importance of a ‘culture shift’ if the sensory modulation approach was to be successfully implemented and embedded.

...it kind of needs to become a culture, if you like, of the ward. But that needs support from the upper management. Like us being on the ground... we can try and encourage people into it, but it really needs top down support. If you're going to do it properly, then spend a bit of money you know. It's a great intervention, it's a wonderful intervention. I mean ultimately it saves money in the end; it's just getting people to see that. (SM4 Site3)

One of the barriers to using sensory modulation identified by participants was that things were done in the way that they had always been done. For example, some staff reported getting stuck in the habit of offering PRN medication when service users were distressed or agitated, rather than considering sensory modulation. The following excerpt shows that even when staff members were available, the sensory modulation choices were overlooked.

It could easily have been done and it probably hasn't. I mean I know I've been on at the weekend and we had 11 and we had three staff down there. I didn't even think of using it, so yeah, I guess it's just something that we need to use a bit more. (SM4 Site4)

Strategies described by staff and service users to support a cultural shift included organisation-wide training, leadership and regular prompts to use it, for example one staff member stated:

I guess you just kind of need people in the staff to... continuously be driving us and if there was regular training and reminders, then that would get more ingrained in the culture. (SM7 Site4)

Another staff participant suggested that a visual prompt might be helpful:

It's about getting it more and more in our culture. Maybe we get a big sign at the nursing station...or maybe on the medication cabinet where they get the PRN, 'have you tried the sensory room?' (SM12 Site4)

Another participant had spoken to doctors about charting sensory strategies for PRN, in addition to medication.

In addition to regular prompting, familiarising all new staff with the sensory modulation approach was seen as important in reinforcing that it was part of the ward culture. It was also recognised that embedding sensory modulation as a routine practice requires the investment of adequate time and resources at an organisational level. Two motivational drivers were noted as being relevant to the culture shift when implementing a sensory modulation approach. The first was an organisational commitment to the minimisation of seclusion and restraint, with a

corresponding development of practices that support this aim. The second motivation for some participants was a commitment to supporting service user coping and wellbeing through facilitating their development of self-awareness and self-management strategies.

Having a vision of how things could be is an important aspect of any organisational change, and one participant shared her vision of sensory modulation being adopted as an integrative and collective approach:

We're taking this further than just the room, and we're working in collaboration as a team... this is our thing, it's everybody's thing. (SM5 Site4)

As this statement suggests, using a sensory modulation approach does not need to be limited to having a sensory room for de-escalation. It can also involve a shared understanding that individual responses to sensory input from the wider physical and social environment also have an impact on arousal and emotion. Having a broader vision of how sensory modulation can be used in the development of wards and staff practices appears to be another important consideration in the organisational management of the approach.

SERVICE POLICIES AND PROCEDURES

Participant accounts also suggested that creating a shift in staff culture and routine practice required the development of service policies and procedures that guided and supported the use of sensory modulation. Staff identified that having a policy that clearly described its purpose and guided implementation was important:

I think we need a policy that talks about sensory modulation... around training and things like that. Then I think we need ... probably more a guideline than a procedure around the use of the actual room. (SM8 Site4)

Most respondents saw the purpose of sensory modulation as being the reduction of service user distress and arousal. Some thought it was important to emphasise that the room and equipment was a clinical practice for de-escalation, rather than an informal 'chill out' room or a place to simply 'get a back massage'. Others saw the purpose as also involving the promotion of service user learning and skill generalisation.

A lack of clear policy in some sites lead to the inappropriate use of the sensory room and equipment. Staff and service users also expressed concern about the potential for restrictive or prescriptive policies. Some existing policies and procedures were seen as barriers to the implementation and utilisation of sensory modulation, such as booking forms and the documentation requirements associated with the sensory modulation pilot project:

I've seen probably over the last 12 months that that's kind of shifted and now it's used much more informally kind of as we see appropriate and ...there's no forms to fill out and it's not probably documented as well as it could be, and it's kind of just something that we might do as part of our everyday practice, not necessarily even going into the room but taking stuff out of the room and using it on the floor. (SM8 Site1)

Others viewed the policy that staff need to be present in the sensory room with a service user as a barrier, due to limited staff time and instances where service users preferred to have their own space. Service users viewed the policy of some sites to restrict the use of sensory modulation to certain times, such as during the day, as impacting on its usefulness. These findings highlight the need to ensure that any policies allow for recognition of service users' particular needs and sensory preferences as well as the clinical judgment of staff members.

STAFF KNOWLEDGE AND CONFIDENCE

A lack of staff knowledge and confidence in using the sensory room and equipment was identified as a common barrier in the participant accounts. Service users reported that sensory modulation was less effective when staff

members did not appear knowledgeable or confident in supporting them to use the equipment. It not only reduced their ability to relax, but also affected the connection with the staff member and their sense of safety. Some staff members also expressed that they would like more confidence and knowledge in how to facilitate effectively, and ongoing training, practice and support were seen as key solutions to this issue:

I've heard a lot of people say that they're not sure, what they're doing... They sort of want to use it but they're not quite sure how everything works. Or the right combination of everything, which lights to put on compared to whether you use the massage chair or the rocking chair. Or whether you use the aromatherapy oils or a CD. You know, like trying to get, that just right combination for the client. People seem to be not that confident in doing it.
(SM6 Site3)

While the majority of staff interviewees felt that they had an appropriate introduction to sensory modulation, several recommended that all acute and community staff should be educated to a pre-determined organisational standard, such as a one or two day workshop. Additionally, some emphasised the need for regular supervision and training updates. Those staff that had attended a comprehensive workshop reported feeling increased competence and confidence in the sensory modulation philosophy, principles and modalities:

So I came back and I was like right I'm going to do this and that and this. I mean if everybody could do one of those workshops, I mean that would be brilliant because it just gave me so much more confidence that I knew what I was doing. (SM6 Site3)

This competence and confidence was generally enhanced when written information was provided for future review and reference within the work environment. Staff participants recommended that sensory modulation education should include sensory modulation theory and opportunities for practical application, principles for structuring and guiding a session including how to match sensory strategies with service user arousal levels and sensory preferences, as well as strategies for dealing with disclosure of past trauma. A number of staff commented on the need to integrate sensory modulation education into existing calming and restraint programmes. An additional education strategy described by staff was the opportunity to trial sensory modulation screening tools and a range of sensory equipment and strategies on themselves. Staff commented on the value of using the tools themselves to support learning as a legitimate stress management tool, and as a shared experience with service users.

The presence of strong leadership was another important aspect of supporting staff confidence and knowledge and participants also noted the need to encourage those with a particular interest in sensory modulation to go on and do advanced training. Finally, having sensory modulation as part of the regular mental health training schedule and opening it to mental health workers from across services was seen as a strategy to expand the capacity and confidence of the wider workforce:

The next step...is actually to have the sensory modulation training available to more than just in-patient staff and to have it on our regular mental health training schedule. So that people, say, key workers in the community who are interested or [staff] who work in other parts of the service can actually come along as well. (SM8, Site4)

Some staff expressed minor concerns about the lack of a robust evidence base for sensory modulation and desired more research and theory in general with increased evidence from the New Zealand health context being seen as particularly important. Building a strong evidence-base for sensory modulation practice will be a significant aspect in the development of training and expanding staff knowledge and confidence.

STAFF AVAILABILITY

Both staff and service users identified lack of staff availability as one of the biggest barriers to implementing sensory modulation, as illustrated in one participant's statement:

I did feel that the room had a lot of potential which was lost due to staffing availability. (SU7 Site4)

The development of competence and confidence in using sensory modulation requires staff to consciously commit time and resources to applying it within a pressured and complex work environment. The nursing staff in particular found it difficult to take time off the floor to support service users in the sensory room, despite the potential for avoiding escalation of distress and agitation:

...to take somebody out for 15 or 20 minutes means you usually need to be replaced... depending on how the staffing is and how the ward is. (SM4 Site4)

The impact of this issue on the successful implementation and utilisation of sensory modulation cannot be underestimated. For sites where it was a requirement to have all service users accompanied by a staff member when in the sensory room, the issue of staff availability meant that the use of the room was either delayed or it was only accessed sporadically.

The participants shared various ideas about how to overcome the lack of staff availability, including creating more time for nurses to spend in the room:

Somehow building in more time for nurses to be able to spend one-on-one time with clients, they can't get off the floor to take clients in there because they've got so much paperwork (SU7 Site4);

There were also suggestions about creating a roster system for nurses and other clinical staff:

You could have like a roster of people who could be available to take people into the sensory room on a given day. Like on Mondays I tend to do a paperwork day, so I'm quite flexible and if someone was distressed I would be more than happy to take a few minutes and sit in the sensory room - a roster system. (SM12 Site4)

Some participants suggested having a number of dedicated sensory modulation specialists to be available to support people in the room:

So, maybe if they just pay people to, one or two people to run the room, and that's their sole duty, you know? To educate the staff as well, you know, about what helps the patients, and not what's just always best for them all the time. (SU17 Site4)

Finally, some believed that training care assistants and peer workers to facilitate the use of the sensory room and equipment would help increase staff availability:

I think we've got a number of care assistants and we've got an OT assistant here who aren't registered clinicians, but are actually the people who have the most available time and are more than competent to be able to take clients in there. So I think that we probably need to be pragmatic about it and train the people that have the time available to take clients in there, because often nursing staff don't and the OTs are really good at making time, but they're not here after hours and they're not here over the weekends, so it's a big gap. (SM17 Site4)

While a range of potential solutions was offered by the participants, services that are committed to the routine use of sensory modulation will need to decide which methods best fit their particular organisation. All of the potential solutions have strengths as well as associated issues that would need to be resolved. Some of the solutions have implications for whether sensory modulation is used as part of an interdisciplinary team approach or is limited to dedicated staff members. In the services that allowed the routine use of the sensory room without staff support, missing and broken equipment and the increased risk of misuse and harm meant that it was not sustainable. What is clear from the participant accounts is that recognising and responding to service user distress and agitation in a timely manner is key to effective use of sensory modulation. The support of a staff member in the process has been shown to be a significant aspect; therefore overcoming the issue of staff availability is vital to the success of future sensory modulation implementation.

ACCESS TO ROOM AND EQUIPMENT

A number of staff and service users described problems with access as another barrier to using sensory modulation. Participants reported that in the general ward the sensory room was usually available when they needed it, so access was not often an issue there. However, both staff and service users from two sites emphasised the need for access in the high needs area where levels of distress and arousal were typically greater.

It would often be quite psychotic people that were in ICU... Yeah and so there are often people like that who are in the intensive care part that would have benefitted from it, but just couldn't. (SM1 Site3)

Our ICU [Intensive Care Unit] was a 9-bedded area and the room was located on the outside of ICU, outside a set of double doors and it would need to have a staff escort which, at times we couldn't escort and supervise a patient over. Basically people who needed the sensory room were the ones that were in ICU who were being secluded and restrained and we couldn't let them out into the general population of the ward. It was tricky to just work around it really. (SM4 Site3)

Staff did not necessarily feel safe, taking people from high needs into the sensory room within the open area. As described earlier some staff did take pieces of equipment through to the secure area, but this was not done routinely and there was no system in place for doing so. Service users supported the idea of having options for soothing, grounding and distracting when they were most agitated, and as the following excerpt illustrates keeping things simple and safe would be a key consideration:

Obviously you're not going to be able to have complicated equipment, but I don't see why you can't have a few beanie bags and a few squishy balls... in HNU, I don't see why they couldn't have a room where, you know...they're not going to have a rocking chair or massage chair or things like that, but even just a couple of pillows, a weighted blanket, a few squidgy balls and popping paper, or non-harmful stuff. (SU1 Site4)

There was a clear need to increase access for people with high acuity and this is an area of sensory modulation practice that requires further development. Two sites had allocated rooms in their high needs area to be used as sensory rooms, but were still in the process of establishing how it could be safely equipped and utilised. Whether a dedicated sensory room is available or not, several participants supported the idea of having one or more mobile sensory carts so that basic equipment could be accessed in all parts of the ward, including bedrooms and the more secure areas.

Another aspect of access that was identified by service users was the availability of sensory modulation at night:

The sensory room here wasn't available, when you actually needed it most. You know, in those wee hours of the morning at four o'clock when you're pacing the corridors. (SU7 Site4)

The sites varied in relation to whether they allowed the sensory room to be accessed at night. For those that did not, it was not clear whether it was a formal policy or an unwritten rule, as one staff statement shows:

I probably don't ever think of doing it on nights. I know somebody asked me, probably six months ago, and I said no you can't use it at night and then thought I don't really know why we can't use it. And everybody said yeah, you can't use it at night, but now I think about it I don't really know why. And I remember at the time thinking, we actually could. I've had really low numbers at the moment but I guess there's that balance. And we do try and encourage people not to stay out, but you know, there would certainly be people who would want to do it all night. But there are certainly people that could just use it, so maybe we do need to look at it. (SM4 Site4)

The effectiveness of sensory modulation for assisting service users to sleep highlights the importance of the sensory room and equipment being available to service users 24 hours a day, seven days a week. A sensory modulation sleep cart would assist service users to use relevant items in their own room and at the time when they are most required, such as at bedtime and overnight. One staff participant described how she thought the use of sensory modulation could be improved:

We'd have a mobile kind of kit... so patients could have access to stuff that's in the room that they could actually have it for their, in their own room to use. There'd be nursing staff available after hours when we're not around too, that that can actually happen. So that people don't get told they can't use the room, and then get quite angry. (SM8, Site4)

A further consideration identified by participants was the potential for increased access to sensory rooms and equipment across different mental health services, such as respite and other residential services. This could also involve access to ongoing support for developing self-awareness and self-management strategies through community mental health services. One participant suggested that the way sensory modulation is presented can reduce accessibility:

I think we need to break down the barrier and get people to realise that it's about what we can do at home and it's about what we can do here. It's about working in partnership, you know, I don't know, you call something clinical, people think they've got to be experts to do it. (SM5 Site4)

While understanding sensory modulation as a clinical tool for de-escalation encourages staff to treat it seriously, the above statement suggests that the underlying concepts and language used should also be accessible to service users if sensory strategies are to be generalised for use in everyday life. A final consideration related to access, is the potential for sensory modulation use to be limited to certain groups of people if it is seen as being most beneficial for service users with specific diagnoses or of a specific gender. While some participants believed it was more effective for some populations, the findings in this study also suggest that it can work for people experiencing a full range of symptoms and of either gender, indicating that sensory modulation access should not be restricted to particular populations.

RESOURCING AND MAINTENANCE OF ROOM AND EQUIPMENT

A final consideration identified from the participant accounts is the need for ongoing resourcing and maintenance of the sensory room and equipment. Having broken, missing or depleted items in the sensory room was a significant barrier to using it at some sites. Participants saw the need for an ongoing budget for replacing broken or missing items and re-stocking useable items, such as aromatherapy oils. Participants also suggested that a system be put in place for regularly monitoring the state of the equipment, cleaning it and replenishing useable items. Ideas included having sensory modulation leaders to do this as part of their role or assigning the task to staff on one night shift each

week. While hygiene was raised as a concern during the initial set up of the rooms, there was little mention of this in the participant accounts. Using washable covers on seating and weighted blankets and antibacterial wipes for the tactile objects assisted in the maintenance of hygiene standards.

Several service users were concerned that sensory modulation would not be maintained as a routine part of inpatient care, as the following statement illustrates:

I really hope that they keep it here knowing how great it is. I would hate to see it cut due to funding or anything, because there are so many things that get cut due to funding as it is. I really hope that this isn't one of them. Quite often Health Boards find it difficult to look at short term and think 'you know long term it could be cutting back on medication', which I am sure it is... or if people get ideas from it, it could even cut down on admissions. Because if they go home and use some of the skills from the sensory room itself, then it may be enough to, I mean you could never say definitely but it may be enough to reduce admissions. (SU4 Site4)

While there were varying views on the degree to which sensory modulation was effective in de-escalation, the general consensus amongst the participants was that it was worth the ongoing investment of time and money required to make it a sustainable practice. Although some items such as the massage chair were relatively expensive, in comparison to other ongoing costs such as PRN medication, the financial outlay was considered reasonable for the benefit gained by a good proportion of service users.

4.6 SUMMARY

The study findings have highlighted something of the ways in which sensory approaches can be used to reduce distress and induce calm. The service user accounts showed the specific mechanisms by which de-escalation can occur and provided evidence of the efficacy of sensory modulation. Despite some variations in confidence and use, the staff perspectives also emphasised the potential of the practice, not only in ward based de-escalation but also as a tool for everyday self-regulation. Finally, the considerations for implementation provided helpful information about what assisted and what impeded the application of sensory modulation at individual and organisational levels. The following discussion will review the findings, make links to existing understandings and outline the implications for future sensory modulation practice.

5.0 DISCUSSION

As outlined previously, this qualitative study sits within the broader *Seclusion: Time for Change* project which set out to evaluate the efficacy and acceptability of sensory modulation as a de-escalation tool and to examine whether the practice has any impact on rates of seclusion and restraint. The specific aims of this component of the project were to: 1) understand service users' experience of using sensory modulation as a tool for calming and de-escalation; 2) explore staff member perspectives of using sensory modulation as a tool for calming and de-escalation; and 3) identify specific facilitators and barriers to implementing sensory modulation in acute mental health wards. The following discussion appraises the findings in relation to these aims as well as the broader *Seclusion: Time for Change* project.

5.1 SENSORY MODULATION OUTCOMES

Overall, the study findings indicate a very positive response to sensory modulation from both staff and service user participants. This in some ways is not surprising, as those individuals who found it useful were more likely to volunteer to participate in the study. However, this positive bias does not negate the value of learning about how and why it is effective for some people. People using acute mental health services in New Zealand have reported experiencing restrictive and institutional environments, overcrowding, physical, verbal or sexual abuse - or the fear of it, traumatic experiences in seclusion, lack of empathetic attention from staff, over-reliance on medication, a lack of psychological assistance and boredom (O'Hagan, 2006). The participant accounts in this study suggest that sensory modulation has the potential to improve various aspects of this experience. Service users described feeling better supported and cared for because of the opportunities created by the sensory modulation approach, including time with staff, a space for sanctuary and escape, and increased personal control and self-soothing. Sensory modulation also provides a meaningful distraction from boredom and a potential alternative to PRN medication through its calming influence.

The experience of both staff and service users provided practice-based evidence of the efficacy and acceptability of sensory modulation. There was a strong consensus that sensory modulation provided a useful tool for calming. Even those staff participants who were sceptical and believed the approach was not suitable for the most aggressive or highly agitated service users, recognised its efficacy in calming people experiencing lower levels of agitation and distress. While the impact of sensory modulation was sometimes perceived to be weaker or shorter term than that of other strategies, it provided an attractive option that encouraged active service user involvement and did not rely on medication, destructive coping strategies or coercive practices. It appeared to create a window of opportunity for redirecting attention, thinking more clearly, reducing unhelpful urges and getting quality rest. It also opened the possibility of service users applying adaptive cognitive and socially focused coping strategies.

The view of some participants that the efficacy of sensory modulation varied depending on diagnosis or clinical presentation align with other research findings which suggested that the approach is helpful for people experiencing anxiety or mood disorders but is particularly effective for people with trauma histories, post traumatic stress disorder and self-harm behaviours (LeBel & Champagne, 2010). However, there were several accounts of people experiencing psychosis experiencing the approaches as useful also, so it would not be wise to prescribe use based on diagnosis or clinical presentation alone. In addition, there were an insufficient number of detailed accounts to draw conclusions about the efficacy of sensory modulation for any one set of symptoms. Indeed, the findings suggest that individual coping style, sensory preferences, self-awareness and self-regulation skills are equally important influences on sensory modulation efficacy. Because of the highly individualised nature of sensory preferences, the specific pieces of equipment affected people's arousal levels in different ways. As such, the findings reveal the importance of identifying sensory preferences early and providing a range of tools and strategies to suit individual needs.

It might be questioned whether there are gender or cultural differences in the efficacy of using sensory modulation. Not surprisingly, the female and Pakeha dominated participant demographics have resulted in the majority of the accounts being either from Pakeha female service users or about Pakeha female service users, leaving less clarity about the efficacy for males and people of other cultures. However, there were accounts from Maori and male service users who found it effective. The findings suggest that any gender or cultural differences may be related more to acceptability issues rather than efficacy per se. Thus, increasing the range of equipment options for males and people of various cultures is an important consideration for practice development. Where possible, matching support staff with service users' gender and cultural needs will also increase comfort and sense of safety in using the sensory practices.

The findings indicated that sensory modulation was not always effective in reducing arousal and occasionally resulted in a negative reaction. Identifying risks and contraindications is an important aspect of developing any new practice and the risk of increased escalation was evident when the room or equipment were not applied according to an individual's sensory, emotional and physical needs. Some participants were not able to sit long enough to engage in the sensory modulation session due to their agitation or feelings of claustrophobia, while others were overstimulated or opened up to negative thoughts or emotions. Practitioners will need to be cognisant of these risks and have an understanding of the person's trauma history and triggers, along with the risk of self-harm or harm to others in the context of using sensory modulation.

One question raised within the data was whether sensory modulation is effective for people who are already highly aroused and at risk of aggressive behaviour. A principle of the sensory modulation approach is to recognise and address agitation early (Champagne & Stromberg, 2004). However, it has also been suggested that to optimise the potential of the approach, the development of sensory strategies for people who are most agitated is required (Te Pou, 2010). Because the sensory rooms and equipment were largely placed in the general ward of the acute units, the findings provide limited examples of sensory modulation use within high needs or intensive care units. However, enough accounts were provided to indicate that a sensory approach is relevant with highly aroused people if risk management principles are followed.

Where possible, the practice should be informed by an understanding of individual risk factors, triggers, sensory sensitivities, late warning signs and sensory preferences. Relevant sensory modulation strategies should be incorporated into advanced directives, recovery and safety plans. The findings suggest that highly agitated people should be supported to use simple sensory items, such as a weighted blanket or a stress ball, which have an ease of use and carry minimum risk of harm. In the examples given, the number of items used at any one time was restricted to one or two, with the focus being on reducing arousal through distraction, safe containment and grounding. The intervention was not conducted in the dedicated sensory room, but in a larger secure area. Modifying the sensory room and practice procedures for use within high needs units is an important area of future practice development.

In addition to having an effect on service user arousal and distress levels by inducing calm, sensory modulation was found to facilitate interpersonal connection and trust. In previous research service users have reported that having support and someone to talk to is a top priority in times of personal distress, but attention from a supportive staff member has not always been available in acute mental health services (O'Hagan, 2006). Therefore, the sense of connection created in the process of using sensory modulation is significant. Human body language, touch and tone of voice are sensory experiences which people are particularly sensitive to when highly agitated. Staff being present to the service user's experience and available to assist and listen during the session can amplify the sense of safety, soothing, stability and control. Importantly, the safe space that develops through the sensory experience, also allows the verbal expression and exploration of underlying thoughts and emotion. This relational aspect of this approach should be emphasised in sensory modulation training, policy and practice.

The third major outcome of sensory modulation was the development of self-awareness and self-management skills for many service users. People who have routinely used self-harm, aggression or other destructive behaviours as a means of release or regaining control are likely to keep doing so, unless they are supported to find other alternatives that work. Turning mental health crises into opportunities for learning about alternative strategies and increased personal responsibility is an essential aspect of recovery-oriented practice in acute mental health services (O'Hagan, 2006; Randal et al, 2009).

The findings within this study support the notion that a sensory modulation approach provides concrete self-management tools that are simple and effective in managing arousal and distress. Participants gained an awareness of their sensory preferences and were able to apply the sensory strategies both within and beyond the ward environment. Significantly, participants reported that developing self-awareness and self-regulation skills was an important factor in the efficacy of sensory modulation. The accounts suggest that emphasis should be placed on self-management as an outcome of sensory modulation just as much as using the approach as a staff lead tool for de-escalation. Over time, a focus on self-management could have the cumulative effect of reducing the length or number of service user admissions as well as increasing the application of sensory modulation in community mental health and residential settings.

5.2 SENSORY MODULATION PROCESSES

The findings suggest that sensory modulation approaches affect the physiological arousal of service users as well as associated emotion and behaviour. The participant accounts provide important insights into how the approach promoted calming and facilitated interpersonal connection and self-management. The impact that having a quiet, private and safe space had on many participants is a significant finding. While it seems common sense that this would be helpful, inpatient mental health wards have typically lacked this type of space. Even bedrooms were perceived as not being as private or free from interruptions and may be shared with others. Creating dedicated sensory rooms as spaces for sanctuary is indicated in the study findings.

Staff also need to recognise the impact of noise, light and social demands for people who are hypersensitive to this sensory input. The account of one participant who absconded from the ward due to being overwhelmed by the noisy ward environment is a valuable reminder of the importance of having respite from overstimulation in a safe and uninterrupted space. Research by the Royal College of Psychiatrists (2001) noted that staff, patients and visitors often perceive wards as noisy, smelly and dirty. This and other literature suggests that general discomfort and aversive conditions, such as hot temperatures, loud noise or unpleasant odours increases the risk of aggressive behaviour by escalating negative affect and physiological arousal (Anderson et al. 2000; Berkowitz, 1993).

The findings also suggest that staff should be aware of principles for soothing, stabilising and mindful distraction. For example, recognising the potential for soothing in their own voices, movements and body language is important. Additionally the principles of using a slow pace and steady rhythm with items such as lighting, music and massage and softness and warmth with lighting, music, blankets and furnishings is important. 'Stabilising' was a key mechanism for many. The massage chair and weighted modalities were frequently reported as being useful; supporting the notion that sustained stimulation of deep pressure receptors appears to be one of the most effective ways of inducing calm, through 'grounding' the person in their body.

Staff can enhance the grounding features of the weighted blankets, massage chair and other items by encouraging service users to shift their attention to the here and now and focus on the physical sensation. Once service users are sufficiently calm, diaphragmatic breathing and mindfulness techniques can also be used to enhance the stabilising effect. Methods such as diaphragmatic breathing and mindfulness use the conscious mind to draw people's attention

to their body and immediate environment (Linehan, 1993). This appears to complement the sensory modulation approach which also draws attention to the body and immediate environment but achieves this by using equipment, environments and activities to regulate sensory input.

Creating mindful distractions using the sensory equipment and environment diverted attention away from distressing thoughts or urges for destructive behaviour, and appeared to be useful for people who were highly agitated. Research suggests that distraction is more helpful in reducing arousal than catharsis or venting of pent up aggression or anxiety (Bushman, 2002). Additionally, the most helpful forms of distraction are activities that induce a calm physical state. So while active strategies such as the use of a punching bag, or distraction through PlayStation were suggested as more attractive options for men, these are less likely to reduce arousal than more mindful distraction. The examples of distraction in participant accounts such as listening to soothing music, blowing bubbles, doing plastic maze puzzles were all found to be useful and induced calm. Distraction is contraindicated if there is potential for service users to be over-stimulated by the sensory environment and unable to focus on one thing, leading to increased arousal levels.

Positive association was less frequently mentioned as a calming mechanism, but for some it provided a welcome escape from the present. If staff are to actively use this as a calming strategy, it is important to discuss with service users other places or times that they most associate with relaxation, and any sensory items that should be avoided due to negative associations. Nature or home settings were mentioned as having calming associations in participant accounts. Using and finding appropriate music, sounds, images, smells and tactile objects in conjunction with guided imagery can all facilitate calming through positive association.

The sense of control gained through sensory modulation was also important to many of the service user participants. The other calming mechanisms, such as soothing and stabilising assisted control over thoughts and feelings, but significantly it was the opportunity for service users to control their own environment that also made a positive difference. Staff can support service users in taking control by encouraging decision making and active participation in setting up the equipment and room for themselves. Staff can also support service users to gain control over breathing and thinking through relevant relaxation and mindfulness techniques.

Overall there are enough general reports of success and specific exemplars in the data to indicate that sensory modulation supported de-escalation in a significant number of people that used it. Staff recounted situations where they would have needed to use some form of medical or coercive practice if the sensory approach had not facilitated de-escalation. However, the participant accounts also suggest that the efficacy of sensory modulation is influenced by many variables, including staff engagement with service users, early recognition of agitation by staff and service users, an understanding of service user sensory preferences and the service users' experience with self-regulation in extreme states. These variables are of course influenced by broader organisational factors such as staffing levels, training, ward culture and policy related to the use of sensory modulation practices. Therefore, it is important to consider these organisational factors and highlight the implications for the delivery of a sensory modulation approach within acute mental health services.

5.3 SENSORY MODULATION IMPLEMENTATION

While sensory modulation is a promising approach which may contribute to reductions in the use of seclusion and restraint, its implementation should be seen as one component in a process of organisational change. The findings support the notion that there is a close relationship between the successful implementation of sensory modulation and other key change strategies such as strong leadership for change, using data to inform practice, workforce development, consumer and family involvement and debriefing techniques (Scanlan, 2010; Te Pou o te Whakaaro Nui, 2010).

The collected accounts suggested that where there was greater investment of organisational resources, clearer procedures and strong leadership related to sensory modulation, there was more consistency and confidence in applying it. For example, a significant number of participants from Site 1 were recent employees who had only received limited training and while sites such as this described the successful use of sensory modulation, the staff accounts were generally not as confident. Whereas, the majority of staff participants came from Site 4 where they had been exposed to more training and had a number of ‘champions’ to support the implementation. The participant accounts from Site 4 indicated more confidence in the sensory approach and this was reflected in the numbers that volunteered to participate, rich descriptions of successful implementation and a broader focus on using the sensory modulation outside the sensory room for self-management. Notably, the consumer advisor was actively involved in sensory modulation at this service and the approach had been integrated into other group and therapeutic programmes on the ward.

The findings provide clear considerations for services implementing sensory modulation as part of a broader organisational change process. Implementation should begin with an organisational commitment to the philosophical and financial investment required for the approach. Creating a ward culture where the use of sensory methods are valued and embedded in practice is important. The perceptions of some staff that sensory modulation was only useful for a specific group of service users may have been a reflection of philosophical variations at different sites and potentially served to contain the time and resources dedicated to it on busy wards. However, the findings highlight that it is important that organisations work to ensure that a sensory modulation approach becomes part of everyday practice, as opposed to an addition to standard care for an identified group of service users. The embedding of sensory modulation into service culture, service delivery, and individual practice, will ensure sustainability and equitable care for all service users accessing mental health services.

In order to achieve the routine and consistent use of sensory modulation staff need to be readily available to observe early signs of distress and support service users in their calming and self-management. In England, the ‘Productive Ward: Releasing Time to Care’ programme has shown that improved ward processes and environments can increase safety and efficiency and most importantly allows nurses and therapists to spend more time in interaction with service users (Robert, Morrow, Maben, Griffiths, & Callard, 2011). Using a programme such as this as part of an organisational change process, would increase staff availability and contribute to the successful implementation of a sensory modulation approach.

Developing strong leadership and ensuring that all staff have access to ongoing education and support is essential. Training should provide opportunities to learn the underlying theory and principles of the approach, practice using the tools, and apply learning to meet the unique needs of individual service users. Ongoing opportunities for practice guidance and feedback from sensory modulation practice leaders or ‘champions’ should be available. Increasing staff confidence and capacity related to assessing risk, management of distress and responding to disclosure of trauma is also an important consideration. Staff experiencing the sensory assessment and equipment for themselves appeared to develop an appreciation for the approach and it was important to ensure that all new staff and service users were well orientated to the sensory modulation principles, as well as the room and equipment.

The findings indicate the need for individual services to develop their own clinical guidelines and practice protocols to be applied alongside existing risk, safety, seclusion, and infection control policies. Guidelines should aim to maintain service user and staff safety but also need to be flexible enough to allow for individualised use. Services are encouraged to make practice expectations very clear from the outset. Key expectations might include; the routine assessment of sensory preferences, the development of personal safety or recovery plans to inform the sessions, staff commitment to work alongside services users within the sensory room and to support the generalisation of strategies beyond the room and ward environment.

The findings suggest a policy of locking the sensory room when it is not in use and requiring a staff member to accompany service users while in the sensory room is advisable. This preserves the space as a sanctuary where the setting and equipment are ready for use as a calming and de-escalation tool. Ideally, an informal and open access 'comfort room' could be provided in addition to the dedicated sensory room. Along with ready access to a portable sensory cart, this would provide more flexible options for service user self-management on the ward.

While the sensory room clearly provided an important sanctuary from the noise and activity of the ward, it is important that use of the sensory modulation approach is not limited to the sensory room. To maximise the potential for calming and self-management the approach should be implemented in the context of the whole ward environment as well as the community and other mental health services. In some settings space will be at a premium and the inclusion of a sensory room may not be appropriate or possible, but this does not preclude the application of sensory modulation principles and strategies. The use of sensory carts and individualised sensory kits were highlighted in the findings as ways of increasing the accessibility and portability of sensory modulation equipment.

The findings did not provide enough detailed examples from service users with specific clinical presentations to draw conclusions about which equipment was effective for particular symptoms. While people with urges to self-harm expressed a need for strong physical sensation through the massage chair or weighted blankets, individual variations in sensory preferences and self-awareness make routine prescription of equipment problematic. However, the participant interviews did highlight some key pieces of equipment that services might consider purchasing because of their general efficacy. While the massage chair was the most expensive item, it was widely reported as being helpful for calming and seen as a worthwhile investment. Both the rocking chair and bean bag were also frequently experienced as comforting and provided useful alternative seating options. The weighted blankets and soft toy animals were found to be valuable tools for grounding and the stress balls were affordable and effective for many participants. Other audio and visual items were helpful additions for some, but were not as essential, as many service users found that escaping noise and artificial light was most effective in reducing their arousal.

If funding for purchasing sensory equipment is limited, it is recommended that services prioritise tools for creating a sense of safety and stability rather than audio or visual distraction. Organisations also need to be prepared for the ongoing cost of replenishing the sensory equipment. The room, furnishings, and tools should be well maintained and clean to convey the service's value of both the approach and the service users who access it.

5.4 LIMITATIONS

The data in this study does not answer the question of whether sensory modulation directly impacts rates of seclusion and restraint in inpatient mental health services. Perceptions of efficacy cannot account for the many variables which impact on how and why seclusion and restraint is used, which makes isolating the impact of sensory modulation problematic. There are also factors that potentially restricted the range of experiences or perspectives collected.

As noted earlier, it is possible that service users and staff who found the approach useful volunteered to participate more readily, leading to a positive bias in the outcomes described. Additionally, males and people from a range of ethnicities, including Maori and Pacific Islanders were under-represented in the study participants. Amongst the staff group, this was perhaps a reflection of the overall demographics, as the majority of nursing and occupational therapy staff are female and of European descent. Amongst service users potential explanations include a higher willingness to talk about their experience amongst female service users of European descent, or the possibility that the acceptability and efficacy of sensory modulation was higher for this group. Similarly, considerably more participants volunteered from Site 4, which also may have reduced the range of perspectives given.

It is important to note that the qualitative nature of the research means it presents subjective views and so the findings cannot be generalised to other services or individual service users with any degree of certainty. This is particularly so, because of the number and complexity of factors that influence the implementation and outcomes of any approach within a particular practice setting. Despite these limitations, the study provides accounts of successful sensory modulation use and highlights important considerations for implementation which will now be addressed in a discussion of key recommendations.

6.0 RECOMMENDATIONS

The study findings add weight to the notion that sensory modulation is a promising approach for prevention and de-escalation of service user distress and arousal within acute mental health services. Participant responses suggest that sensory modulation is an acceptable addition to practice, with the benefits far outweighing any potential risk. The data provides clear considerations for clinical practice and organisational implementation and with these findings in mind, the following actions are recommended.

6.1 SENSORY MODULATION PRACTICE

It is recommended that attention is given to the following points in staff training and practice in order to strengthen the efficacy and acceptability of sensory modulation.

- To maximise the potential for de-escalation equal emphasis should be placed on all three outcomes highlighted in this study, namely: 1) inducing a calm state; 2) increasing interpersonal connection; and 3) facilitating service user self-management. Neglecting any one of these areas will significantly reduce the potential benefit of sensory modulation practice.
- Service users should be provided with a thorough orientation to the sensory tools and supported to use them through modelling and guidance.
- Sensory tools and strategies should be individualised in order to meet the unique sensory, cultural, gender and safety needs of each service user.
- The application of sensory modulation should be integrated with comprehensive risk assessment, trauma informed care and collaborative recovery and safety planning practices.
- Staff must understand the mechanisms for calming, and support service users to identify what best works for them and apply this in a variety of circumstances through a collaborative process of trial and discovery.
- Sensory modulation should be used pre-emptively wherever possible, with a focus on early recognition of warning signs and triggers for distress.
- Use and outcomes should be routinely documented. Documentation procedures need to be convenient and integrated within existing ward systems for recording daily service user interactions and progress. Additionally, a description of each service users' sensory sensitivities, triggers, early warning signs and preferred sensory coping strategies should be available in an individual recovery or 'safety plan' (Lee et al., 2010) and kept in each service user's file. For convenience a copy of individuals' key triggers and sensory preferences can also be filed in a locked cupboard within the sensory room, following admission to the ward. To monitor overall use and outcomes, services should consider the ongoing use of a 'guestbook' where pre and post use distress or calm levels can be noted along with equipment use.

6.2 SERVICE IMPLEMENTATION

As previously discussed, the successful implementation of sensory modulation is dependent on other aspects of organisational culture and systems. While sensory modulation is a promising tool for de-escalation, implementation of it should equally be driven by its capacity to support service user engagement, self-awareness, self-regulation and recovery. Organisational policy and practice guidelines should emphasise the interpersonal and self-management aspects of sensory modulation along with its use in reducing distress. In addition to clear policy the following recommendations support the implementation and embedding of a sensory modulation approach in service culture.

Training is an important consideration in increasing staff confidence and capacity for utilising sensory modulation. Regular opportunities for training should be available for all staff within acute mental health services and it is essential that all new staff have access to relevant training. The range of training offered should include.

- Foundational training involving underlying theory and principles and familiarisation with the sensory equipment, such as the two-day ‘familiarisation’ workshop developed by Te Pou.
- ‘Train the trainer’ workshops in which sensory modulation leaders develop advanced knowledge for supporting others’ sensory modulation practice. Te Pou has also developed this training.
- The routine inclusion of sensory modulation application as a de-escalation tool within calming and restraint training.

Leadership for change is a key component in the successful implementation of sensory modulation approach. It is recommended that each service has at least two nominated sensory modulation leaders who can oversee training updates, monitor use and provision of the room and equipment, supervise care assistants and other clinical staff, and work with service users who have particularly complex or problematic sensory sensitivities or needs. Ideally, leadership will be provided across disciplines and include nurses, occupational therapists, consumer advisors and psychologists.

Resourcing is another key consideration. In addition to the initial set-up costs organisations need to budget for the ongoing maintenance of the sensory room and equipment as well as making allowances for the staff time required for training and facilitating the sessions. At sites where sensory modulation is already established, trialling trained and supervised care assistants to support sensory modulation practice may be one way of increasing staff availability for use. Additionally, increasing staff contact time by finding efficiencies in systems and administration tasks is recommended.

Developing acceptable systems for recording individual and wider service outcomes is an important element in evaluating implementation. Systems for measuring sensory modulation outcomes need to be developed or adapted to suit the context of individual services. Regular auditing of sensory modulation across the service including the number of sensory assessments completed, and the documentation of process and outcomes would support the development of quality systems and practices (LaBel et al., 2010). Sensory modulation leaders may be charged with conducting internal audits, while the use of a consultant to provide an external perspective would also enhance implementation.

Further research is required to increase the depth of understanding related to the process and outcomes of sensory modulation. However, the complexity of factors influencing the success of seclusion and restraint reduction programmes makes the quantitative evaluation of specific initiatives challenging (Hardesty, 2007). One method that may be effective in this regard is the use of case studies. In-depth and mixed methods case studies illustrating the application of sensory modulation for a range of individual service users and staff would uncover some of the more subtle considerations for practice. For example, the depth provided in case studies would allow more exploration of how specific sensory equipment or strategies assisted people with particular sensory sensitivities and symptoms. Utilising the adult/adolescent sensory profile (Dunn, 2002) and other standardised assessments of symptoms would help to identify patterns of sensitivity and efficacy across people with particular diagnoses over time. Similarly, organisational case studies could be used to increase the depth of understanding in relation to the wider factors influencing the implementation and outcomes of sensory modulation over time, at a service level (Ministry of Health, 2010).

6.3 CONCLUSION

The study findings provide practice-based evidence of how sensory modulation has been used in specific acute mental health services, how it has impacted on particular staff members and service users and some of the successes and issues experienced in implementing the approach. The participant accounts indicate that the sensory modulation approach is a potentially powerful and recovery-oriented approach when used within acute mental health services. Any approach that has the potential to improve service users' experience of mental health services and facilitate recovery is a worthwhile pursuit, therefore further investment in sensory modulation practice development and research is warranted.

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APPENDIX A:

STUDY INTERVIEW SCHEDULES

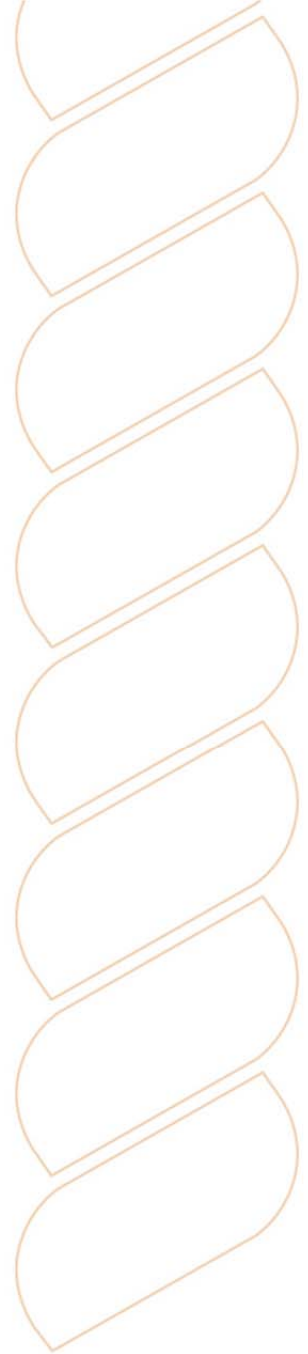
SERVICE USER INTERVIEWS

1. When you first heard about the 'sensory room' (or other name, such as a "chill out room") what were you expecting?
2. How were you first introduced to the room? What kind of orientation or explanation were you given?
3. Tell me about your experience of being in the room. What is your most memorable experience (good or bad)?
4. What was it like using the different equipment in the room? What were the most useful items/objects in the room?
5. Given that sensory rooms are generally thought to be helpful to calm people, how do you think that it worked for you? What effect did it have on you?
6. What helped you to use the sensory room? E.g. Things the staff said or did? How the was laid out/where it was located? Things you did? What could have improved your experience?
7. If you could wave a magic wand, how would you set up the room to make it a safe place for you to feel calm? What would you do to improve it? What could staff do differently?
8. Some people have said the room stopped them getting restrained, put in seclusion or given medication when they were distressed. What are your thoughts on that?
9. Were you able to access the room when you wanted? Can you give me an example of what happened?
10. In what situations do you think the sensory room should be used?

STAFF INTERVIEWS

1. Tell me about how you came to be involved with the project.
2. How well was the concept received by staff? How have these views changed since then?
3. What challenges or difficulties did you face during the initial stages? What factors helped the set-up process?
4. What sort of information, training or resources did you receive? Improvements?
5. What has been your experience of using the sensory room as an intervention? Please give a specific example.
6. What impacts have you observed on service users? E.g. on behaviours; moods; anxiety? Are there any other effects that have come about as a result of using the sensory room?
7. Given that sensory rooms are generally thought to be helpful to calm people, how well has this been achieved with the service users you have worked with?
8. How has the sensory room affected the use of alternative interventions? E.g. Seclusions? Restraints? PRN usage?
9. Given the experiences you have had, how well do you think sensory modulation works as an intervention?
10. In what situations do you think the room should be used?

11. What systems are in place for booking and using the room? What, if any, issues have there been around access to the room?
12. Are there certain groups of service users that the sensory room has been most useful for? If yes, which groups? What other groups might benefit?
13. How well does the sensory room meet the needs of different cultural groups? How could it be made more culturally appropriate? Specifically Maori and Pacific.
14. In an ideal world, how would you set up the room to make it as effective as possible?
15. What are the most important considerations for staff when using the sensory room as an intervention? I.e. what sorts of things were helpful?
16. What are your thoughts about using sensory rooms as part of routine practice? Please give reasons/examples.
17. What procedures or policies are needed to facilitate on-going use/expansion of the sensory room?



AUCKLAND

Level 2, 8 Nugent Street (B), Grafton
PO Box 108-244, Symonds Street
Auckland 1150, NEW ZEALAND
T +64 (9) 373 2125 F +64 (9) 373 2127

HAMILTON

293 Grey Street, Hamilton East
PO Box 219, Waikato Mail Centre
Hamilton 3240, NEW ZEALAND
T +64 (7) 857 1202 F +64 (7) 857 1297

WELLINGTON

Level 3, 147 Tory Street
PO Box 6169, Marion Square
Wellington 6141, NEW ZEALAND
T +64 (4) 237 6424 F +64 (4) 238 2016

CHRISTCHURCH

21 Birmingham Drive, Middleton
PO Box 22105, High Street,
Christchurch 8142, NEW ZEALAND
T +64 (3) 339 3782 F +64 (3) 339 3783