L’intégration sensorielle permet de réduire le besoin de contention dans les unités psychiatriques

Le recours à la contention en psychiatrie est un défi majeur pour les patients, le personnel et la société. Un projet de recherche a montré que l’utilisation systématique de l’intégration sensorielle peut réduire le besoin de contentions en unités psychiatriques

- Diminution de 38 % du besoin de contentions
- Diminution de 46 % du besoin de médications forcées
- Diminution totale de 42 % du recours aux contentions et aux médications forcées

Diminution des contentions et des médications forcées avec l’intégration sensorielle

Les adolescents et adultes en unités psychiatriques souffrent souvent de troubles sensoriels et cela peut avoir des effets négatifs sur leur qualité de vie. Les troubles sensoriels peuvent par ailleurs compliquer l’état d’esprit et mener à l’anxiété et au stress. La stimulation sensorielle relaxante peut être utilisée comme une manière de changer l’état d’esprit, et dans de nombreuses situations prévenir et diminuer les conflits, et donc de cette manière elle peut réduire le besoin de contentions.

Protac MyBaSe®

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Deux projets – un résultat

L'ergothérapeute danoise Charlotte Andersen a étudié l'effet de l'utilisation systématique de l'intégration sensorielle sur les contraintes dans deux grands projets. Les deux projets sont basés sur la méthhode SPI (Processus Sensoriel et Intervention). Cette méthode présente une approche systématique des sens humains : l'ouïe, l'odorat, le goût, la vue, l'équilibre, le toucher et la proprioception. En proposant systématiquement aux patients des activités de stimulation sensorielle, ces deux projets montrent que l'intégration sensorielle peut réduire l'utilisation de contentions chez les patients souffrant de troubles psychiatriques.

Projet pilote 2013*

- **Objectif :**
  réduire les contentions par ceinture de 50% en 6 mois.
- **Résultat :**
  Cet objectif a été atteint en 3 mois.

Etude de cas contrôle 2017**

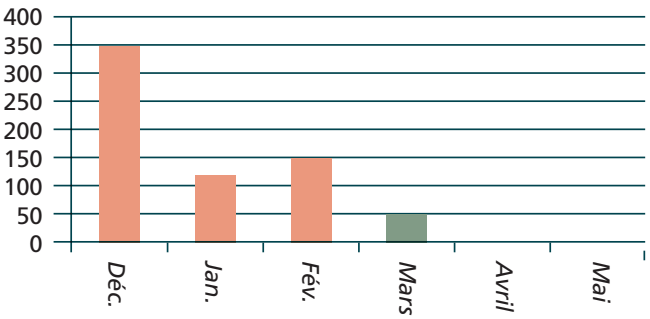
- **Objectif :**
  réduire les contentions et l'isolement dans les unités de santé mentale
- **Résultat :**
  Diminution de 38 % du besoin de contentions
  Diminution de 46 % du besoin de médications forcées
  Diminution totale de 42 % du recours aux contentions et aux médications forcées

En pratique, ces deux projets consistaient en :

- Etre certain que des aides à la stimulation sensorielle étaient disponibles
- Planifier les interventions ergothérapeutiques en se concentrant sur les sens
- Apprendre au personnel à réaliser des profils sensoriels (SPI-test)
- Entraîner des supers utilisateurs SPI.

Le projet de 2013 a également montré que les contentions par ceinture ont de nouveau été utilisées régulièrement lorsque le projet a été arrêté. Cela démontre à la fois que le projet a eu un effet et que l'effort doit être maintenu sur le long terme.

Nombre d'heures avec contentions par ceintures (2013) :



** 'Projet : Réduire l'utilisation de contraintes et d'isolement dans les unités psychiatriques, à l'hôpital d'Augustenborg, dans le sud du Danemark' 2013 (Project: Reducing the use of restraints and seclusion in psychiatric units at Augustenborg Hospital, Southern Denmark 2013)*

*** 'Appliquer la modulation sensorielle aux patients en santé mentale pour réduire l'isolement et les contraintes : une étude de cas' par Charlotte Andersen, Anne Kolmos et al, Nordic Journal of Psychiatry, 2017 (Applying sensory modulation to mental health inpatient care to reduce seclusion and restraint: A case control study Authors: Charlotte Andersen, Anne Kolmos et al, Nordic Journal of Psychiatry, 2017)*

Protac SenSit® Nature

Comment l'intégration sensorielle aide les patients psychiatriques ?

Beaucoup de patients psychiatriques souffrent de troubles sensoriels qui peuvent les conduire à éprouver de l'anxiété, de l'insécurité, à s'agiter ainsi qu'à un manque de conscience du corps. Souffrir d'un trouble sensoriel fait qu'il devient difficile pour le cerveau de traiter et filtrer tous les stimuli sensoriels que nous recevons constamment. La capacité du cerveau à réguler et organiser ces stimuli est appelée l'intégration sensorielle. Ce traitement se fait de manière inconsciente, et diffère d'un individu à l'autre : pour certains cela fonctionne automatiquement, alors que d'autres ont besoin d'un petit coup de pouce pour rendre leur système sensoriel fonctionnel et ainsi ressentir une amélioration de leur qualité de vie.

En travaillant systématiquement avec l'intégration sensorielle, on peut soit aiguiser ou atténuer les sens. La proprioception qui informe le cerveau de l'activité dans les muscles et les articulations, est particulièrement intéressante à travailler car elle a un effet calmant et organisant sur le cerveau. Nous utilisons la proprioception de manière intuitive pour s'apaiser et se calmer : par exemple, si vous êtes agité, vous aurez envie de taper du pied, voire même d'aller marcher. Les personnes souffrant de troubles sensoriels et/ou psychiatriques peuvent avoir encore plus de difficultés car leur proprioception est souvent sous-stimulée, et, pour cette raison, vont instinctivement bouger leur corps afin de stimuler leur proprioception. Toutefois, le cerveau n'enregistre pas si la proprioception est stimulée activement grâce à des mouvements ou passivement grâce à des massages, des compressions des muscles et articulations, ou encore grâce à une aide à l'intégration sensorielle. De cette manière, les aides à l'intégration sensorielle, qui exercent des pressions dynamiques et profondes sur les muscles peuvent avoir un effet relaxant sur les patients psychiatriques.

La méthode SPI

Le point de départ de la méthode SPI est le profil sensoriel de chaque patient. Il est défini grâce à des questions réponses, et des préférences du patient, qui peuvent aider le personnel à mieux comprendre le besoin sensoriel du patient. Ce tableau montre des indicateurs potentiels.

Seuil neurologique*

	Passive	Actif
Forte	**Spectateur** N'enregistre pas avoir été touché Lent pendant les activités Equilibre faible Goût et odorat perturbés	**Chercheur** Aime les activités et les exercices Aime la musique et chanter Aime les goûts épicés et les nouvelles odeurs Bon en multitâche
Faible	**Capteur** Est souvent étourdi et pas concentré Est distrait par le bruit et le désordre Se sent mal à l'aise lorsqu'il est touché Prend facilement peur	**Eviteur** Se tient à l'écart du bruit Préfère rester seul Evite les activités sociales Mange seulement la nourriture qu'il connait.

Auto-régulation**

Winnie Dunn, Living Sensationally : Understanding Your Senses

*Le Seuil neurologique indique la quantité de stimulation nécessaire pour que le cerveau soit informé de l'entrée sensorielle.
**L'auto-régulation indique la capacité à contrôler l'entrée sensorielle.

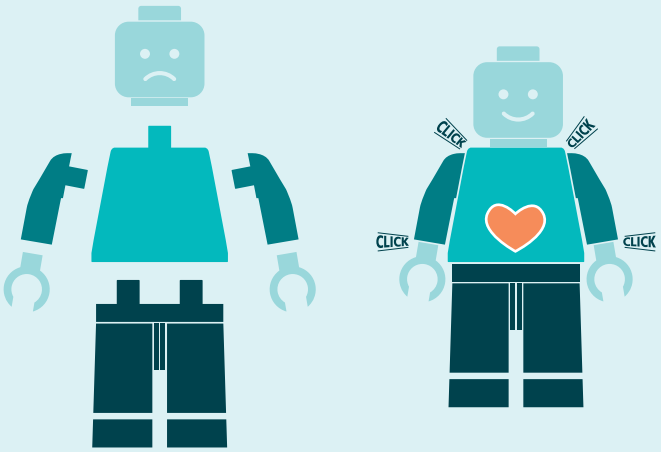
Les projets inclus :
Protac MyBaSe®
Protac Ball Blanket®
Protac SenSit®
Protac MyFit®

Protac MyFit® existe en tailles jusqu'au 6XL

La stimulation de la proprioception a un effet coordonnant et apaisant, et c'est la base de l'intégration sensorielle de tous les sens.

Imaginez que l'être humain soit construit à partir de blocs de Lego. Lorsque nous ne recevons aucune information proprioceptive, les blocs se ramollissent et nous perdons la sensation de notre propre corps, ce qui amène un sentiment d'insécurité et nous empêche de nous reposer correctement.

La stimulation des muscles et articulations peut être comparée au fait de ramener les blocs ensembles et de les faire réintégrer l'image de notre corps, ce qui a un effet apaisant et nous fait nous sentir en sécurité et résilient.



Protac est un fabricant de diverses sortes d'aides à la stimulation sensorielle. Ces aides sont toutes caractérisées par la présence de balles spécialement conçues et à faible coefficient sonore. Les mouvements et les pressions dynamiques des balles stimulent le sens du toucher (tactile) et le sense des muscles et des articulations (proprioception) et ont un effet apaisant sur le corps et l'esprit. Les produits sont certifiés CE en rapport avec la règlementation sur les équipements médicaux de classe 1 et leurs effets sont bien documentés dans plusieurs projets de recherche scientifique.

Divers projets de recherche récents incluent des produits Protac

TDAH

Le pédopsychiatre, Allan Hvolby, a montré que les enfants souffrant de TDAH voient leur temps d'endormissement se réduire de 40% et se réveillent moins souvent la nuit lorsqu'ils dorment avec une Protac Ball Blanket®. Les balles de 5 cm dans la couverture stimulent les enfants avec des pressions dynamiques et profondes. Un sommeil meilleur et plus long améliore la concentration de l'enfant à l'école : leurs symptômes TDAH sont réduits et leur bien-être est amélioré de 30%.

Dépression et insomnie en psychiatrie

Sanne Toft Kristiansen, étudiante en doctorat, a étudié l'efficacité de la Protac Ball Blanket® en tant qu'alternative non pharmacologique à la médication contre l'insomnie causée par la dépression dans une étude randomisée dénommée : « The efficacy and appropriateness of Protac Ball Blanket® on insomnia in depression in outpatient clinics ».

Les troubles sensoriels chez les enfants à l'école primaire

L'étudiante en doctorat et ergothérapeute Ann N. Nielsen a étudié les effets du Protac MyFit® (gilet à balles) chez les enfants à l'école primaire dans un article appelé : « Effects of systematic proprioceptive-tactile stimulation with use of Protac MyFit® vest on the children's abilities for participating in school activities, and secondary their attention, concentration, and on-task behavior abilities ».

La Démence

Le projet pilote dans un EHPAD danois a montré que les produits Protac on un effet apaisant sur les personnes souffrant de démence. Cela a réduit l'agitation psychologique et motrice de 60% et a contribué à améliorer le confort tout en réduisant les comportements agressifs et extravertis.

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Applying sensory modulation to mental health inpatient care to reduce seclusion and restraint: a case control study

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ORIGINAL ARTICLE

Applying sensory modulation to mental health inpatient care to reduce seclusion and restraint: a case control study

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ABSTRACT

Background: Clinical training in managing conflicts and preventing violence seldom contains sensory modulation (SM) as a method to de-escalate and prevent restraint and seclusion. Sensory-based interventions promote adaptive regulation of arousal and emotion. SM is a complementary approach that is associated with reduced rates of seclusion and restraint in mental healthcare, but there is need for more research in this area.

Aims: Using SM to reduce restraint and seclusion in inpatient mental health care.

Methods: The study included two similar psychiatric units where one unit implemented SM and one unit served as the control group. In the very beginning of the study, a staff-training program in the use of SM including assessment tools and intervention strategies was established. Data on restraint and forced medicine were sampled post the course of the year of implementation and compared with the control group.

Results: The use of belts decreased with 38% compared to the control group. The use of forced medication decreased with 46% compared to the control group. Altogether the use of physical restraint and forced medication decreased significantly with 42% ($p < .05$).

Conclusions: Implementing a SM approach in mental healthcare facilities has a significant effect on the reduction of restraint and seclusion. As a part of the implementation, staff training and education in SM are crucial.

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KEYWORDS
Acute psychiatry; restraint and seclusion; sensory modulation; sensory room; staff training

Background

For many psychiatric inpatients, too much or too little, sensory stimulation, both internally and externally, makes them unsafe and with a feeling of loss of control causing anxiety and agitation. This may lead to restraint or seclusion. Inadvertently, such interventions often add more overload to an already over-whelmed and over-stimulated neurological system. Sensory modulation (SM) facilitates the self-regulation of both physiological and emotional arousal and may assist in the reduction of seclusion and restraint (1). Sensory-based treatment has been identified as an effective treatment approach for clients who are distressed, anxious, agitated, or potentially aggressive and as an alternative for more coercive actions (2). To help to regulate emotions, SM practices include the use of sensory activities and equipment, behavioral strategies, and modifications of the environment. Effective use of SM helps to service users become more aware of their sensory preferences and sensitivities and more in tune with their own responses. Practices include sensory screening and assessment, exploration of sensory tools and equipment, development of individualized sensory plan, personalized sensory kits, modification of the environment, and education of clients, families, and care providers (1,2). Sensory rooms provide a place to destress, explore sensory tools, identify personalized coping tactics, and learn stress management strategies (1). Sometimes there is a screen for relaxing videos. Some rooms have locked cabinets for sensory items, and others have the items available throughout the room, depending on the level of supervision required. Popular activities in the rooms include massage chairs, weighted blankets, weighted lap pads, soft blankets, aromatherapy items, music, stress balls, and fidget tools. Sensory items for self-regulation are made available in a variety of ways besides being offered in sensory rooms.

Jean Ayers developed sensory integration theory and intervention techniques in the late 1960s. Sensory integration provides a framework of the impact of sensation on occupational performance on how one synthesizes, organizes, and processes incoming sensory information. Originally, this theory was developed for children with sensory processing disorders (SPDs), and was therefore not designed for adolescents and adults (3). Some psychiatric illnesses that may have onset in adulthood, for example schizophrenia or depression may also have impaired sensory processing. Therefore, adults can lack treatment for their sensory needs (4). One issue is that a substantial proportion of adults with SPDs who also have symptoms of mental illness, may blur the focus on the underlying SPD (5). Clinical studies show a

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correlation between SPD and mental illness, such as schizophrenia and bipolar disorder (6). SPD is a negative reaction to certain sensory inputs, which normally would not be interpreted as aversive, that is a behavioral manifestation of a SM dysfunction (5). Those with SPD may have lower thresholds for sensory stimuli that typically lead to heightened responses with less habituation. This, in turn, may lead to behaviors associated with sensory sensitivity such as fearfulness, cautiousness, or sensory avoiding. Adults often take on avoidance as a coping mechanism with SPD (5). Schizophrenic and bipolar patients have higher scores on sensation avoiding when compared to the mentally healthy group. The schizophrenia group also has higher scores on low registration and lower scores on sensation seeking than the mentally healthy group. Individuals with schizophrenia tend not to detect available sensory stimuli. When stimuli are indeed detected, they are often avoided (7,8). Adults who display symptoms of SPD can affect their behavior in negative ways, which unfortunately can lead to restraint and seclusion when admitted to a psychiatric hospital.

According to the Danish Ministry of Health, 21.1% of the psychiatric patient population have been submitted to some kind of involuntary intervention (9). Therefore, it is very important that more mental health units implement SM as an approach to prevent restraint. A 24-month study from the Netherlands showed that staff training could reduce the use of belt up to 64%. Training in and understanding of sensory integration theory was a large part of the program in the Netherlands (10). Education and staff training are a core strategy towards the goal of reducing restraint and seclusion leading to shorter and fewer hospitalizations, reduced use of sedatives, and hypnotics (11).

Aims

We hypothesize that implementing SM as an approach in inpatient mental health care by providing the staff with training in SM methods and the trained use of sensory-based assessments and sensory equipment will reduce seclusion and restraint, including forced medication. Here, we propose the skilled use of a multi-sensory environment and various sensory-based treatment tools, to facilitate client-centred and meaningful treatment interventions to provide opportunities for self-regulation and learning.

Materials and methods

The two psychiatric open units, each with 17 beds and a secluded area, participated in the study. The secluded area had three single bedrooms, a living room, and a kitchen available to the patients. This area was reserved for patients who needed more intensive care and were in danger to hurt themselves or others. The inpatients were both men and women aged 18–65 years suffering from various psychiatric illnesses such as schizophrenia, bipolar disorder, and depression. The staffs consisted of a multidisciplinary team with occupational therapists, nurses, social workers, and medical staff, yielding 25 persons. The two units were located on the same hospital in the Region South of Denmark, Augustenborg Psychiatric Hospital. A comparison of the two units included in this study is outlined in Table 1. The two units were comparable. The control unit was also a 17-bed open unit with a secluded area. The control unit had inpatients both men and women aged 18–65 years of age with varied psychiatric illnesses in a range from schizophrenia, bipolar disorder, and depression. All patients admitted to the project unit or the control unit were assigned according to their geographical area. When patients were admitted, it was normal procedure to asses with Bröset violence checklist on both units (12). The control unit did not use the ASP. The control unit did not use any other assessments similar to ASP nor did they have any access to sensory equipment. The control unit continued their treatment as usual during the project. The control unit had no SM training during the study.

Table 1. A comparison of the two units prior to the project.

01.01.12–31.12.12[a]	Project	Control
Average length of hospitalisation	22.2 days	15.3 days
Number admitted	218	224
Number discharged/dead	308	339
Total number of beddays	5926	5475

[a]The composition of the units was the same prior and during the study.

The 12-month case-control study period was scheduled from 1 September 2014 until 31 August 2015. In the first 2 months, the staffs on the project unit were trained by skilled occupational therapists in SM theory and practise. The two occupational therapists on the project unit received more intense training in SM and their key tasks were to coordinate and plan the approach to each of the patients in close collaboration with the remaining personnel. The two occupational therapists on the project unit completed a 3-day course in SM and a 1-day workshop with the rest of the staff four months later. The training of the remaining staff was carried out once a week during a 2-month period. In total, there were 25 persons on staff; meaning 3–4 persons would come to the training class each week until the whole staff completed the training. In the sensory training class, the staff would learn about theory in sensory integration and some practical training in the ASP assessment and the use of sensory equipment. The occupational therapists received training in ASP and how to plan the sensory intervention strategy for the patients. SM was preferably used in the daytime and on weekdays, due to the number of personnel present. The study focused on educating all staff in order to unite the efforts on reducing restraint and seclusion under weekly supervision by a skilled occupational therapist. Beside from education in SM theory and practice, the study unit had access to a variety of sensory modalities located in the unit and a sensory room available. The patients could be treated individually or in groups depending on their level of agitation. This was always assessed individually. The available sensory modalities were ball blankets, a ball chair, large therapy ball, therapeutic music, and Nintendo Wii sports games. The latter was especially intended for patients who were not able to go outside for a walk in the surrounding area. When the patient was admitted to the hospital, the occupational therapist would carry out an *Adolescent/Adult Sensory Profile* (ASP) on the patient in the first days of the admission.

It was not possible to assess all patients on the project unit due to limited therapeutic resources, so the occupational therapist made an individual choice on which patients to assess. The ASP is a judgment-based self-questionnaire consisting of 60 items rated for frequencies of the behaviour, which requires that the patient is able to answer the 60 items, which not every patient in an acute state is able to. Therefore, an alternative observation test was used if a patient could not participate in ASP. ASP is a standardized and validated assessment that measures sensory processing among adolescents and adults, ages 11 years and up. It elicits information about ones responsiveness to sensory stimuli and identifies processing deficits in the sensory system (6). The questionnaire identifies the sensory patterns from the patient's daily living, for example: "*do you avoid escalators or elevator, because you don't like the movement*?" An affirmative answer reveals how the sensory processing is in relation to the vestibular sense. If the sense is challenged, it is important to choose an activity, where the patients keep their head in a vertical position to prevent dizziness. During the 12-month project, ASP assessment was exclusively used for patients with *a prior* history of restraint or seclusion or the patient showing signs of SM dysfunction. Patients in an acute state would be assessed with the *Sensory Integration Inventory*, which is based on observations (13). The purpose of the Sensory Integration Inventory is to screen patients who might benefit from SM treatment approaches. When patients were more stable, an ASP would be carried out. The result of the ASP was presented for the patient, allowing them insight in their own sensory profile. During the 12-month study, 40 ASP were carried out by the occupational therapists on the project unit. All 40 ASP showed SM difficulties. With each ASP, the occupational therapist would make a sensory plan for the patient, based on his or hers individual response. This plan would be carried out in cooperation with the rest of the staff. The SM strategies in the sensory plan, would support the patients' self-regulation, the ability to feel calm, reduce anxiety, restlessness, or sleeplessness.

Data

The data from restraints and the use of forced medicine were monitored on both psychiatric units during the study period and compared. The rate is the number of events per bed day. Incidence rate ratio (IRR) is the rate ratio between the rate of restraints and the use of forced medicine in the control unit and the rate of restraints and the use of forced medicine in the project unit. The data were extracted from the electronic database of the Danish Department of Health during the period 01.09.14–31.08.15. All Psychiatric Hospitals in Denmark report their weekly data on restraint and seclusion to the Danish Department of Health Database. The statistical analyses were made in the statistical software package STATA.

Ethics

It was for ethical reasons and by the Danish law not possible to include patients in seclusion in the current research project. Therefore, the focus was entirely on staff training to improve the quality of the methods on the unit.

Table 2. Number of belt restraints and forced medication, rates, and rate ratios in project ward and control ward.

	Project	Rate	Control	Rate	Rate ratio	95% CI
Bed days	5371		4627			
Total	33	0.0061	49	0.0106	0.58	0.38–0.90
Belt restraints	18	0.0033	25	0.0054	0.62	0.34–1.13
Forced medication	15	0.0028	24	0.0052	0.54	0.29–1.02

The Research Ethical Committee in the Region of Southern Denmark approved this method. The study was notified to the Danish Data Protection Agency.

Results

The number of belt restraints and forced medication were significantly reduced by 42% in the project unit compared to the control unit (see Table 2). There was a reduction both in the use of belt restraints and in the use of forced medication, 38% and 46%, respectively, but when looked separately these reductions failed to reach statistical significance at the 5% level.

Discussion

Implementing such an innovative practice, utilising SM, will hopefully empower our consumers to be partners in their care and they do indeed ask for sensory approaches as a means to help to them manage their everyday challenges. Our caseload is growing and changing, every day, and clinicians must be very dynamic and have skills in a very wide variety of different intervention strategies, which in an effective manner, can be implemented in acute psychiatric care as a new direction towards the united goal of reducing restraint and seclusion. In the Region South of Denmark, an implementing strategy has been carried out and the sensory approach is now implemented in most psychiatric units in the whole Region, with the determined purpose to reduce the overall use of restraint and seclusion. Sensory rooms have been established on every unit. A plan for education has been rolled out, with the goal to train all of the therapists in SM, offering them a 5-days course in ASP and theory in sensory integration. By the end of 2017, approximately 80 therapists will be skilled in SM. Looking at the results of this study, we highly recommend this approach to all psychiatric wards in hospitals, not only in Denmark, but other countries as well. The benefits from implementing this approach are multiple. It is our belief, that any unit can implement this strategy if they follow this model. Besides reducing the restraint and seclusion and forced medicine, this model also improves the environment on the unit, creating a safer space for all, both inpatients as well as personnel. When admitted to an acute psychiatric care, our clients are in a need for care and protection and we must thoroughly monitor our approaches towards clients who may have trauma in the past lives and provide with all means, innovative approaches, which do not prolong or worsen the impact of the trauma.

Conclusion

This study shows that forced measures, for example restraint and forced medicine, were reduced significantly by

implementing SM as an approach in a multidisciplinary team and in the environment on a unit. Overall, the restraint and the use of forced medicine decreased with over 40% during the 12-month study. The results of this study give us a reason to believe that something similar can be implemented on other psychiatric units in Denmark with equal results, and is comparable to the studies from the Netherlands (10) and in the US (1). The Dutch study was on elderly population in nursing homes and therefore not quite the same as the population in this study but the US study was carried out on an acute psychiatric unit with inpatients similar to patients in this study, with a broad variety in diagnosis, gender, and age. Limitations of the study is that it was performed on two units with a limited number of patients, one study and one control, but could have been stronger if more units had participated from other hospitals from around Denmark. In 2013 we did a small pilot study, we had already introduced the staff to the method and therefore it was not a very new thing in this unit. If we had done the pilot study on a different unit, we might have had even better results due to our own contamination of the project unit prior to the study. During the summer vacation, the control unit was closed and the patients were transferred to other units on the hospital, why the number of bed days in total, is lower on the control unit compared to the project unit, as shown in Table 1.

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Disclosure statement

All the authors of this paper certify they have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge, or beliefs) in the subject matter or materials discussed in this manuscript.

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