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ORIGINAL PAPER

Mindfulness-based Training Shows Promise in Assisting Staff to Reduce Their Use of Restrictive Interventions in Residential Services

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Abstract The aim of this study was to examine the association between mindfulness training and restrictive interventions implemented by staff employed in two residential service homes who supported people with a disability who showed severe challenging behavior. Twelve disability support workers completed an 8-week group-based mindfulness training program in February to March 2010. Pro re nata (PRN, as required) and emergency seclusions and chemical restraints reported for the homes during the 2 months of the training program and the 3 months following the program (February to June 2010) were compared to those for the corresponding months in 2009. Compared to the number of PRN and emergency seclusions and PRN and emergency chemical restraints for the two homes for February to June 2009, those for February to June 2010 were significantly lower. Mindfulness training may have helped staff to respond to clients' challenging behaviors in a more mindful and less reactive way.

Keywords Mindfulness · Restrictive interventions · Disability sector · Residential services

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Introduction

There is evidence to suggest that without appropriate interventions, challenging behaviors, such as harm to self or others, will persist over time (Totsika et al. 2010). Furthermore, it is likely that these behaviors will be managed primarily with chemical and/or other restrictive interventions, even though there is a lack of evidence about the effectiveness of these interventions (Oliver-Africano et al. 2009; Webber et al. 2010a, 2011a). Restrictive interventions impact directly on the person's human rights and self-determination, and given the lack of empirical evidence of their effectiveness and their negative impact on well-being, their continued use has been increasingly challenged (Allen et al. 2009; Ferleger 2008; LeBel et al. 2010; Sturmey 2009).

The lack of effectiveness of restrictive interventions is not surprising because they do not necessarily address the cause of the behavior or provide for the person's needs nor do they teach the person more adaptive ways to communicate or meet their own needs (Webber et al. 2010b). Alongside the lack of effectiveness of restrictive interventions, there is a considerable empirical literature suggesting that good behavior support is important because it reduces behaviors of concern and the use of restrictive interventions (Webber et al. 2011b).

It is well-known that certain kinds of disability staff training result in better outcomes for the people they support, including the reduction of the use of restrictive interventions (Williams 2010). In a recent review of successful staff training methods, Williams reported the use of mindfulness training as one of the beneficial training methods that result in reductions in the use of restrictive interventions.

Singh et al. (2008) argued that mindfulness training is beneficial to carers and the support they provide others because it encourages acceptance of self and others, produces calm attention to self and others, and encourages

reflection and responsiveness to others. The results of their research indicate that mindfulness training has yielded benefits for carers and the people they supported. For example, Singh et al. (2004) found evidence that increasing the mindfulness of a caregiver produced a significant increase in the levels of happiness displayed by individuals with profound multiple disabilities supported by the caregiver. They found that regardless of whether the level of happiness was initially observed to be high or low in the presence of a caregiver, it increased markedly when an individual interacted with a caregiver who had received training in mindfulness when compared to caregivers who had not been provided with mindfulness training.

In another study, Singh et al. (2007) reported that children who had shown aggression towards others displayed increased positive and decreased negative social interactions with their siblings after their parents received training in the philosophy and practice of mindfulness. In the same study, the parents of children with a disability also benefitted from mindfulness training and reported increased satisfaction with their parenting, more social interactions with their children, and lower parenting stress.

More recently, Singh et al. (2009) found evidence that training in mindfulness was beneficial to both staff and the individuals with intellectual disabilities they supported in reducing the use of physical restraints and PRN (pro re nata, as required) medication for aggressive and destructive behaviors. Twenty-three members of staff working in four group homes participated in a 12-week mindfulness training program. In this study, Singh et al. found that the use of restraints decreased as the training progressed, with almost no use being recorded by the end of the study. Use of physical restraints was associated only with new admissions and on-call staff who had not received training in mindfulness. The use of PRN medications also decreased, and staff and peer injury levels were close to zero during the latter stages of the mindfulness program. The authors speculated that the mindfulness training may have encouraged staff to engage with clients in a more considered thoughtful way, rather than responding in a reactive way. They also speculated that staff showing more mindful responses increased the possibility that more positive outcomes could arise from interactions between staff and clients.

Brooker et al. (2013) examined an 8-week mindfulness training program, known as "Occupational Mindfulness" (OM), delivered to 12 disability support workers within a large non-government provider of disability services in the Australian state of Victoria. In this sample of support workers, compared to pretraining levels, the observing facet of mindfulness increased significantly following participation in the OM program, while the non-judging facet showed a trend towards a significant increase as measured with the Five Facet Mindfulness Questionnaire. In the same study, participants also completed a questionnaire about perceived changes in their attitudes and behaviors that occurred as a direct result of participation in the OM training program. It was found that 90 % of participants reported positive changes in their awareness of sources of stress in their lives, awareness of stressful events as they unfolded, and ability to manage stressful situations in an appropriate manner. The present paper builds on these previously reported findings by examining whether the OM program was associated with decreases in the use of restrictive interventions in the two group homes where these 12 disability support workers were employed. Based on Singh et al.'s (2009) study on mindfulness, it was expected that the OM training would result in decreases in the use of restrictive interventions by helping staff to better manage stressors and increasing their ability to respond mindfully to potentially stressful situations that arose.

Method

Participants

Participants were recruited through a large non-government provider of disability services in Victoria, referred to here as "the organization". The inclusion criterion was regular employment at one of two residential service houses selected for the study. A total of 12 disability support workers participated in the training program. Across the two houses, these staff supported a total of seven clients who were subject to restrictive interventions. All seven clients were diagnosed with an intellectual disability and resided at the houses during the period spanning the entirety of the study. Six of the clients were diagnosed with autism, with one also having a diagnosis of schizophrenia. Another client was diagnosed with schizophrenia, but not autism.

Twenty-two senior managers within the organization also participated in the OM training program. The training of managers was regarded as important to assist with the development of an organizational culture of mindfulness and for managers to understand and support the OM training program. In addition, having the training program legitimized by members of the senior management team was regarded as a key implementation strategy in creating a culture where staff felt permitted to use mindfulness skills in an occupational context. This approach was consistent with previous research in which the central role of a leader has been found to be an important factor in organizational change in disability services and the

reduction of restrictive interventions (Ferleger 2008; LeBel et al. 2010).

Design

A pretest-posttest design was used to measure the influence of the mindfulness training on restrictive interventions.

Data Collection

Participant demographic information collected included age, gender, and education. Restrictive interventions for the two houses selected for the study were extracted from a central database maintained by the Senior Practitioner in the state of Victoria, based on data reported by providers of disability services.

Under the Disability Act 2006, organizations providing services for clients with disabilities in Victoria are required to report the use of restrictive interventions on a monthly basis to the Senior Practitioner. Every month, disability services must report the use of routine and PRN (as required and specified in a behavior support plan) and emergency (used in an emergency and not specified in a person's behavior support plan) chemical and mechanical restraint and seclusion. Data reported by the organization to the Senior Practitioner during February to June 2009 and February to June 2010 were analyzed. This data included the reported frequency of use of non-routine restrictive interventions, that is, the number of PRN and emergency chemical (defined as medicines used to control behavior and not treating an underlying physical or mental illness) and mechanical restraints (defined as materials [eg., splints, belts, clothing] used to prevent movement as a behavioral control) and seclusions (being locked in an area without other people without the ability to leave) reported for February to June 2009 and February to June 2010 for both homes. In this study, the focus was on changes in PRN and emergency use of restrictive interventions reported to the Senior Practitioner, since these are most likely to show change. Most routine restraint used in Victoria is chemical restraint, which is unlikely to change over the short term.

For each type of restrictive intervention, percentage changes in the combined total for both houses was calculated by subtracting the number of restrictive interventions for February to June 2010 from the number of restrictive interventions for February to June 2009 and then dividing by the latter. Paired sample *t* tests were used to compare restrictive interventions reported for February to June 2009 to those reported for February to June 2010.

Mindfulness Training

The Occupational Mindfulness (OM) training program developed for this study has been described in detail previously (Brooker et al. 2013) and is summarized briefly here. The OM program was adapted from Mindfulness-based Cognitive Therapy (MBCT; Segal et al. 2002b) and Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn 1990). It is a manualized program delivered by an instructor in eight weekly 2-h group training sessions. Participants engaged in the core mindfulness practices, including mindfulness of breathing, body scanning, and mindful stretching, sitting, and walking. These formal meditation methods were supplemented with brief informal practices including a "3-min breathing space" and a "five mindful breath" exercise for use throughout each day of the program. For approximately 40 min per day for 6 days of the week, participants were expected to undertake homework which consisted of "formal" and "informal" mindfulness exercises. The OM program was delivered to participants from each house at an off-site location, so that participants could fully engage in the sessions without the distraction of their usual duties. Each group was facilitated by a different psychologist, each of whom had extensive experience in mindfulness and had undergone formal training in MBCT.

The development and implementation of the OM training program was carefully negotiated by the researchers and representatives from the Victorian Office of the Senior Practitioner and the organization to increase the likelihood that it would be fully supported at all levels of the organization. A member of the research team visited both of the houses to present a 1-h information session about the OM program and research project. This session included an introduction to mindfulness and information about the secularity of mindfulness and its development from a variety of cultural traditions. The voluntary nature of participation in the OM program and study was emphasized, and staff were provided with the opportunity to ask questions about all aspects of the training program and research.

OM group sessions were videotaped to enable facilitator supervision and assessment of treatment fidelity. Treatment adherence was assessed using the OM Adherence Scale, which was adapted from the 17-item Mindfulness-based Cognitive Therapy Adherence scale (MBCT-AS; Segal et al. 2002a). Using this scale, a clinical psychologist with experience and formal training in group-based mindfulness interventions rated a random selection of 20 % of sessions across the training groups. Adherence to the manualized OM program was rated as good to excellent across the groups. Further details of the OM Adherence Scale and the audit undertaken in

the present study have been reported elsewhere (Brooker et al. 2013).

Procedure

The study was approved by the Monash University Human Research Ethics Committee. A cover letter, study explanatory statement, and consent form were mailed to potential participants by the organization's project manager, a senior manager who reported directly to the chief executive officer. Staff who wished to participate were requested to return a signed consent form directly to the research team. All subsequent contact with participants was made directly by the research team and the OM trainers. Before the training commenced, participants were scheduled to attend a one-on-one interview with the OM trainer for their training group. The functions of the interview were to provide further information about the training program, answer questions that participants had regarding the program, and to emphasize the central role of homework practice in gaining benefit from the program.

The pretraining interview and OM classes were conducted during standard work hours, with the training being delivered across 8 weeks during February and March 2010. The organization paid participants their standard wage for attendance at the interview and training group sessions; however, homework activities were unpaid and undertaken in participants' own time. Staff were reimbursed for travel to and from the interview and training venues.

Results

A total of 82 % of disability support staff regularly employed at either of the two selected supported shared houses participated in the study. For house 1, nine disability support workers of ten invited staff agreed to participate. For house 2, five disability support workers of seven invited staff participated. Two disability support workers from house 1 subsequently withdrew from the study following the first week of the Occupational Mindfulness training program, leaving a total of 12 disability support workers participating in the study. Of these participants, five (41.7 %) were female, and the mean age was 36.1 (*SD* 9.7) years. The highest level of education completed by participants was primary school (8.3 %), secondary college (16.7 %), certificate or diploma (33.3 %), undergraduate degree (33.3 %), or postgraduate degree (8.3 %).

Figure 1 displays the combined number of seclusions for house 1 and house 2. Compared to the combined number of seclusions for houses 1 and 2 for February to June 2009, those for February to June 2010 decreased by 57.9 %. This reduction was significant, t (4)=3.77, p<0.05.

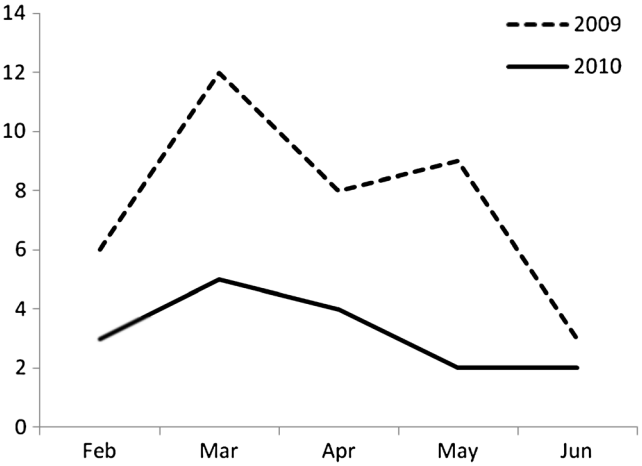

Fig. 1 Total seclusions for houses 1 and 2 for Feb–Jun 2009 and Feb–Jun 2010. Note: Occupational Training was delivered in Feb–Mar 2010

Figure 2 shows the combined number of PRN and emergency chemical restraints for the two houses. The total number of chemical restraints decreased by 48.2 % from February to June 2009 to February to June 2010. This was a significant reduction, t (4)=2.69, p<0.05.

Mechanical restraints were reported for house 1 on two separate occasions in February to June 2009, while none were reported for the corresponding months in 2010. There were no mechanical restraints reported for house 2 during the periods examined in this study. The low number of mechanical restraints precluded statistical analysis of differences in frequency of these between 2009 and 2010.

Discussion

The aim of the present preliminary investigation was to examine whether an Occupational Mindfulness training program for disability support staff resulted in decreases in the use of

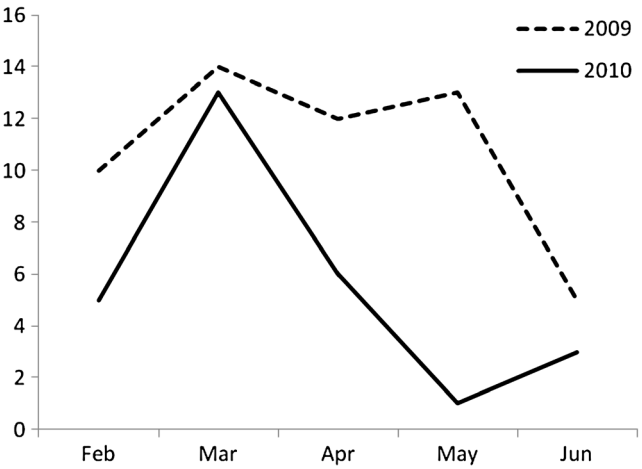

Fig. 2 Total chemical restraints for houses 1 and 2 for Feb–Jun 2009 and Feb–Jun 2010. Note: Occupational Training was delivered in Feb–Mar 2010

PRN and emergency use of chemical and mechanical restraint and seclusion on people with a disability. As expected, the results suggest that the OM training program was associated with decreases in the use of chemical restraint and seclusion. This study confirms the findings of Singh et al. (2009) showing a decrease in the use of restrictive interventions following training in mindfulness and adds to the evidence that mindfulness may be a useful technique in helping staff reduce their use of restraint and seclusion.

An examination of the mechanisms underlying the relationship between the OM program and the reduction in restrictive interventions was not possible within the design of this small exploratory study. In considering possible explanations for the relationship between mindfulness and restrictive interventions reported in their study, Singh et al. (2009) speculated that improvements in staff's ability to observe client behavior without forming judgements or expectations about the behavior may have contributed to a reduction in reactive behavior by staff including the use of restrictive interventions. This is consistent with the finding that in the current sample, the OM training was associated with a significant increase in the mindfulness facet of observation, as reported elsewhere (Brooker et al. 2013). In addition, as previously reported in Brooker et al., 90 % of the current sample of disability support workers reported positive changes in awareness of sources of stress in their lives, awareness of stressful events as they are happening, and ability to manage stressful situations in an appropriate manner (Brooker, et al.). These findings are in line with the current observed reduction in restrictive interventions as they suggest that staff were more mindful of and less reactive to stressful situations such as challenging client behavior.

Apart from the possibility that the OM program may have contributed to changes in how staff observed and reacted to clients' behavior, it is also feasible that clients may have altered their behavior in response to changes in staff demeanor brought about by the mindfulness training. As noted by Singh et al. (2009), clients may respond with more socially appropriate behavior on sensing increased calmness among staff resulting from mindfulness training. Similarly, in the current study, it is feasible that clients may have adapted their behavior in response to significant improvements in positive affect and the mindfulness facet of observation reported by staff (Brooker et al. 2013). It makes intuitive sense that staff who experience higher levels of positive affect and who are more observant and aware of their own stress and feel more able to cope with stressful situations will behave differently to others who require their direct support than staff with lower levels of these characteristics. This possibility should be followed up in future research. One way this could be done is to examine the nature of interactions between staff and clients prior to and following a mindfulness intervention with staff.

The present finding of a significant reduction in restrictive interventions for two residential services homes following staff participation in the OM program is encouraging. Nonetheless, there are a number of considerations with regard to implementing mindfulness programs on a broader level to achieve lasting reductions in restrictive interventions. For example, mindfulness is widely recognized as a skill that requires ongoing formal practice to maintain benefits after a mindfulness-based training program such as MBSR, MBCT, or the OM program. Further research is necessary to investigate the extent of ongoing formal mindfulness practice that is necessary to maintain the effective use of mindfulness in the workplace. Similarly, given the considerable resources required to implement an 8-week group-based program in occupational settings, it is important to determine the minimum dose necessary to deliver benefits such as reductions in the use of restrictive interventions. For example, the reductions in restrictive interventions reported by Singh et al. (2009) were achieved through a 12-week course of 2-h weekly sessions, corresponding to a total of 24-h face-to-face training time. In contrast, the Occupational Mindfulness training program involved 16 h of training contact time, raising the question of whether similar reductions in restrictive interventions might be achieved with a shorter and less expensive training program.

Limitations of the present study included the small sample size and a non-experimental design. The lack of a randomized control group precludes drawing firm conclusions regarding the impact of the OM program on restrictive interventions. Ideally, a large randomized control trial is necessary to determine the effectiveness of the OM program in reducing the use of restrictive practices in the disability sector. This will be a challenging study to design and carry forward, however, as a cluster design will be indicated to minimize contamination effects.

Another important area for future research is to evaluate the impact of Occupational Mindfulness training for disability support staff on client well-being using client-centered quantitative measures, for example the Personal Well-being Index (Cummins et al. 2003). It would also seem worthwhile to investigate the effectiveness of the OM program in reducing restrictive interventions in other settings in which clients are subject to restrictive interventions, for instance psychiatric inpatient units and nursing homes.

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