Evaluation of Mindfulness-Based Intervention: Impact on Mental Wellbeing and Challenging Behaviour in Individuals with Acquired Brain Injury within an Inpatient Rehabilitation Service

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Aims and Objectives

This project aimed to investigate the effectiveness of Mindfulness-based intervention (MBI) on the mental wellbeing and behaviour of individuals with acquired brain injury in an inpatient rehabilitation setting.

Introduction

An acquired brain injury (ABI) refers to any injury to the brain which occurs after someone in born. This includes non-traumatic causes such as strokes, brain tumours, and aneurysms, as well as traumatic brain injuries such as motor accidents and falls. In the UK, there were 354,699 admissions to hospital with brain injury in 2019-2020, an increase of 12% since 2005-2006 (Headway, 2020). Those with ABI can have a variety of needs encompassing physical, emotional, behavioural, cognitive and psychosocial changes which can persist for the duration of their lifespan (Alderman & Worthington, 2023). Lasting effects can increase stress and reduce overall wellbeing (Chan et al., 2009).

Mindfulness has been defined as purposefully paying attention to the present moment, with a nonjudgemental attitude of acceptance (Sharma & Rush, 2014). Activities can include meditation, body scans and yoga, where individuals bring attention to their thoughts and emotions. Mindfulness interventions have been found to have positive effects on physical health, including improving pain management (Creswell et al., 2019), as well as improving mental wellbeing in aspects such as self-esteem (Pepping et al., 2013), stress reduction (Nyklicek & Kuijpers, 2008), emotional regulation (Robins et al., 2012), depression and anxiety (Song & Lindquist, 2015).

In recent years, research on MBI for brain injury rehabilitation has gained attention. A study examining the feasibility and potential efficacy of mindfulness-based cognitive therapy (MBCT) for individuals with cognitive impairment following brain injury suggested improvements in emotional regulation, coping skills, and overall psychological functioning in participants who completed it (Turner & Paterson, 2019). Additionally, MBCT has been suggested to improve mood, reduce anxiety and enhance the psychological wellbeing of individuals with mild brain injury (Dunford, E & Woolrich, R, 2018; Trivedi, P., Wykes, M, 2019). Comparably, investigations into mindfulness-based stress reduction in mild traumatic brain injury patients found the intervention to be effective in reducing aggression, increasing quality of life, and more effective than alternative interventions (Shirvani et al., 2021).

Despite a body of research investigating MBI in a diverse range of populations, research has yet to explore its effects on complex brain injury, those with high levels of behaviours that challenge, and in inpatient rehabilitation services where the environment can often be stress-inducing. Therefore, it cannot yet be assumed that the same findings would be produced within this population and setting.

Method

MBI was implemented in a 15-bed inpatient rehabilitation ward of St Andrew Healthcare's Neuropsychiatry Division, Northampton. Weekly sessions of 60 minutes each were offered by the Assistant Psychologist (AP) and voluntarily attended by patients. Sessions involved meditation, self-compassion and stress-reduction activities.

Measures

This project employed quantitative methods. Changes in mood were gauged using the Ottawa Mood Scale, comparing patients' self-reported data before and after each session. The influence of MBI on overall mental wellbeing and challenging behaviour was evaluated by comparing Overt Aggression Scale data (OAS-MNR) and incidents of patient assaults over a 4-month period before and during the intervention. The CALPAS scale was used to assess participant enjoyment and therapeutic alliance following 4 months of MBI.

Results

Positive pre-post intervention mood changes were evident on the Ottawa Mood scale following MBI with the paired sample t-test revealing a significant increase in happiness rating. Following the intervention, patients rated themselves as happier, relaxed and much calmer (See Figure1).

Following the introduction of Group Mindfulness patients also engaged in fewer assaults, and the number of challenging behaviours significantly reduced when compared to 4 months prior to the introduction of the group.

The CALPAS scale found positive results in regards to the service users views of MBI. The question *'Did you feel satisfied with the group programme?'* found a mean average of 75.5% on a 0-100 scale of agreement. *'Did the group facilitator show a sincere desire to understand you?'* had a mean of 80% and *'Did you feel you were working well together with your facilitator?'* found a mean of 85.5%, suggesting MBI supported the development of strong therapeutic alliance.

Figure1. Changes in Happiness Score, Number of Challenging Behaviours and Patients' Assaults following the introduction of Mindfulness

"Helps me concentrate" "Relaxing" "We should do it more often" "It's the only time the group is quiet so you can gather your thoughts" "It helps to shut it all out and focus on your breathing" "Beneficial"

Conclusions

The results suggest that participation in weekly MBI can positively impact mood and diminish challenging behaviour in individuals with complex brain injury. The findings align with prior research which has indicated that MBI has a positive effect on emotional regulation, mood, and overall quality of life.

The implications of this project may contribute to professional practices by offering an effective strategy for supporting the wellbeing of those with complex brain injury, ultimately reducing challenging behaviour and supporting rehabilitation.

Limitations and Future Direction

Limitations of the project include relying on self-report tools for mood measurement and the challenge of ensuring consistent weekly participation due to the voluntary nature of sessions and patient turnover.

Future research could enhance validity by including a control group to compare the effects of MBI on mood and behaviour with those who have not participated in the intervention. In addition, qualitative methods could be employed to assess participant views more thoroughly.

References (further information available upon request)
Headway. Statistics [Internet]. Headway.org.uk. 2019. Available from: https://www.headway.org.uk/about-brain-injury/further-information/statistics/

Shirvani S, Davoudi M, Shirvani M, Kolsimi P, Hojat Panah S, Shoshtari F, et al. Comparison of the effects of transcranial direct current stimulation and mindfulness-based stress reduction on mental fatigue, quality of life and aggression in mild traumatic brain injury patients: a randomized clinical trial. Annals of General Psychiatry. 2021 Jun 15;20(1).

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