Mindfulness-based interventions for youth in the criminal justice system: a review of the research-based literature

Rachel Murray, Rebecca Amann and Katey Thom

School of Nursing, Faculty of Medical and Health Sciences, University of Auckland, New Zealand

Mindfulness is a technique and sense of being present in the moment that incorporates aspects of acceptance, openness and meditation with the ultimate intention of improving well-being. Research indicates that mindfulness can significantly improve negative personality traits, reduce stress, increase attention, alleviate chronic pain and enhance mental health. Mindfulness-based interventions in correctional facilities have resulted in reduced hostility and improved self-esteem for adults, but less is known about its applicability amongst youth. This article reviews the research-based literature on the use of mindfulness-based interventions for youths (aged 13 to 24 years) involved in the justice system. A total of ten studies were located and synthesised into four themes of stress reduction, self-regulation, anger management and acceptance. The article concludes by considering the methodological rigour of the reviewed studies, providing recommendations for future research and contemplating the positive impact that mindfulness interventions might have on youth in the criminal justice system.

Key words: aggression; criminal justice; incarcerated; mental health; mindfulness; rehabilitation; self-regulation; youth.

Introduction

While the number of youths (aged 10 to 16 years) charged in court has decreased over the last five years in New Zealand, young people (aged 17 to 24 years) make up 16.7% of the country's prison population (Department of Corrections, 2009). There are many theories around drivers of youth offending. Pleysier, Vanfraechem, and Walgrave (2017) surmise that young people who offend generally fall into one of two categories: 1) the offending results from common adolescent stressors and tends to cease as adulthood is reached; and 2) the offending is likely to reoccur, leading to recidivism, and results from a complex net of influences such as

psychosocial factors and continual environmental stressors. Lambie and Randell (2013) argue that members of this second group are particularly susceptible to the negative impact that incarceration can have on mental health and behaviour, often resulting in higher rates of recidivism. Indeed, New Zealand's reimprisonment rate for offenders released under the age of 20 years is double that for offenders released over the age of 40 years (Department of Corrections, 2009).

One intervention that has been successfully implemented in the adult prison population with the aim of tackling the drivers of offending is mindfulness. Benefits found in such populations include reduced stress,

Correspondence: Katey Thom, Senior Research Fellow, Faculty of Medical of Health Sciences, University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. Phone: +64 9 923 9579. Email: k.thom@auckland.ac.nz

reduced hostility, improved self-esteem, reduced mood disturbances and improved overall health outcomes (Grossman, Niemann, Schmidt, & Walach, 2004; Samuelson, Carmody, & Bratt, 2007; Shonin, Van Gordon, Slade, & Griffiths, 2013). Other benefits include a significant reduction in drug and alcohol use (Bowen et al., 2006).

Mindfulness is a technique and sense of being present in the moment, and being consciously but non-judgmentally aware of one's mental, emotional and physical states (Eberth & Sedlmeier, 2012; Kabat-Zinn, 2003). It incorporates aspects of acceptance, openness and meditation with the ultimate intention of improving well-being (Bishop et al., 2004; Eberth & Sedlmeier, 2012; Kabat-Zinn, 2003). Mindfulness achieves this by helping those who use it to become more aware of their mental and emotional responses to situations, which allows intense feelings, thoughts and impulses to be regulated, ultimately resulting in an improvement in behaviour (Bishop et al., 2004).

The known psychological effects of mindfulness include significant improvements in negative personality traits, reduced stress, improved intelligence, reduction in neuroticism, improved well-being and increased attentiveness (Eberth & Sedlmeier, 2012). Improvement in health-related outcomes has also been proven to result from mindfulness, with mental health being of particular significance (Grossman et al., 2004; Zoogman, Goldberg, Hoyt, & Miller, 2015).

Mindfulness can be achieved through a variety of techniques and methods (Bishop et al., 2004). The two most commonly used techniques are mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT). MBSR is a mindfulness intervention spanning a period of eight weeks in which mindfulness sessions are delivered in a group setting. These sessions are held once per week, with one full-day session held towards the end of the eight-week period. The sessions consist of a variety of mindfulness exercises such as mindful

movement, body scanning, walking meditation and sitting meditation. Participants are also encouraged to continue personal mindfulness practice as homework, whereby they are able to learn to incorporate mindfulness into their daily lives (Cullen, 2011; Zoogman et al., 2015). MBCT is also an eight-week intervention that was initially derived from MBSR but with the specific intention of preventing major depression relapse. The primary function of MBCT is to enable participants to cognitively identify negative thoughts and experiences, and then to perceive them non-judgmentally and openly. The ultimate aim is to prevent negative thoughts from ruminating and causing further negative consequences (Finucane & Mercer, 2006; Zoogman et al., 2015).

Historically, mindfulness and its primary principles of directing, sustaining and deepening attention originated from Buddhism (Cullen, 2011). However, its contemporary use has become largely westernised and its popularity has grown significantly over the last 40 years (Himelstein, Saul, Garcia-Romeu, & Pinedo, 2014). Given its expanding popularity, increasing research has emerged on the impact that mindfulness can have on a variety of populations, including adult prison populations. Given the success of mindfulness interventions amongst adult prison populations, this study aims to explore what is known about the use of mindfulness amongst young people.

Materials and method

The search terms 'incarcerated', 'youth', 'mindfulness', 'mindfulness-stress reduction', 'intervention', 'prison' and 'juvenile' were entered into PsycINFO, CINAHL Plus, PubMed and Google Scholar in various combinations. The search was limited to peer-reviewed studies published between 2008 and 2017 in order to access the most up-to-date literature on the topic. Google Scholar provided between 2000 and 8000 hits. Only the first 60 titles were read, knowing that the

results are ordered in terms of relevancy. The other databases collectively resulted in 110 hits. All of these titles were scanned for relevancy by using inclusion criteria which require that the studies report empirical results, are written in English and primarily focus on a mindfulness-based intervention with youth (aged 13 to 24 years) in the criminal justice system. Following this process, 14 studies were read in full and 7 were identified as suitable for inclusion in the review. The references of these 7 studies were then hand scanned and – using the same inclusion and exclusion criteria – another 3 studies were identified. A final sample of 10 studies was thus deemed suitable for inclusion in this review. The final sample was split and randomly assigned to the authors R. M. and R. A. Each author read through their studies twice, colour coding any themes identified. The themes were then written in a table, along with their related evidence. To ensure cross-validation, the studies were then swapped between the authors and reread twice to search for more themes. The findings were discussed and it was determined that the strongest common themes are stress reduction, improved self-regulation, anger management and acceptability.

Results

Of the ten studies included in this review (for a summary, see Table 1), nine are based in North America and one is based in Iran, and all were published between 2011 and 2016. The study settings are mainly youth correctional facilities, including one programme that serves as an alternative to incarceration. The mindfulness interventions used in the studies vary in both practice and length. The intervention durations range from eight to fifteen weeks, with the majority lasting eight weeks as per the common practices of MBSR and MBCT described above. The specific mindfulness tools utilised within the interventions range across the studies, but common elements include mindfulness meditation,

body scans, deep breathing, mindfulness-based discussions and experiential activities. In terms of measuring the results, eight studies examine the effects of mindfulness-based interventions using variables such as aggression, self-regulation, stress, substance use, impulsiveness and attention, while three also focus on the feasibility of the intervention. Additionally, two studies specifically concentrate on the development of a conceptual teaching model for mindfulness with a focus on the experiences of the incarcerated youth. The quantitative studies include randomised control trials that use self-report questionnaires, and one also uses a computer simulation system. Three of the qualitative studies use semi-structured interviews, open-ended interviews and participant observations. Four studies use mixed methods, including self-report questionnaires, biological markers, personal reflections, focus groups and semi-structured interviews.

Stress reduction

Five studies found a reduction in the participants' stress due to the mindfulness-based interventions (Barnert et al., 2014; Barrett, 2016; Himmelstein et al., 2012a, 2012b; Le & Proulx, 2015). A statistically significant reduction in perceived stress was found in two studies ($p < .01$ in Himmelstein et al., 2012a and $p < .05$ in Le & Proulx, 2015). Incarcerated adolescents expressed that in common custody situations such as court hearings, stress levels decreased when they used the mindfulness techniques they had learned (Himmelstein et al., 2012a, 2012b). Furthermore, participants reported finding it easier to relax and reduce stress through mindfulness (Barnert et al., 2014; Barrett, 2016; Himmelstein et al., 2012b). Barrett (2016) explains that mindfulness interventions show participants ways to cope with stress. Additionally, physical changes such as reduced muscle and jaw tension were noted during mindfulness activities (Barrett, 2016). Le and Proulx (2015) also identified that

Table 1. Details of the studies included in the literature review.

Author	Country	Focus	Methodology	Sample	Key findings
Barnert, Himelstein, Herbert, Garcia–Romeu, and Chamberlain (2014)	USA	Comparing the experiences of incarcerated male youth in a 10-week meditation intervention with a control group	Mixed method; self-report questionnaires; semi-structured interviews	29 incarcerated males in a youth detention centre (14–18 years); 16 in treatment group, 13 in control group	Statistically significant increase in self-regulation Qualitative data showed improvements in focus measures such as increased self-discipline and increased social cohesion
Barrett (2016)	USA	Investigating how the mindfulness interventions benefited the participants	Participant observation; open-ended semi-structured interviews	10 males in an alternative to incarceration programme (18–24 years)	Mindfulness interventions improved participants' ability to cope with stress
Himelstein (2011)	USA	Effects of an 8-week mindfulness intervention focusing on substance use in incarcerated youth	Mixed method; self-report questionnaires; semi-structured focus group interviews	48 male inmates (15–18 years)	Mindfulness-based interventions found to be feasible; impulsiveness decreased and perceived risks of drug use increased; self-regulation showed no significant change.
Himelstein, Hastings, Shapiro, and Heery (2012a)	USA	Determining intervention feasibility and investigating the influence of a mindfulness	Quasi-experimental; self-report assessment scales; semi-structured interviews	32 adolescent male inmates	Mindfulness concluded to be a feasible intervention; significantly

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Table 1. (Continued)

Author	Country	Focus	Methodology	Sample	Key findings
Himelstein, Hastings, Shapiro, and Heery (2012b)	USA	programme on incarcerated adolescents Determining intervention feasibility and investigating the influence of a mindfulness programme on incarcerated adolescents	Semi-structured interviews	23 male inmates (14–18 years)	improved self-regulation and reduced perceived stress Mindfulness found feasible and acceptable; improvements identified in a range of subjective areas
Himelstein, Saul, and Garcia-Romeu (2015)	USA	Assessing the effects of adding a mindfulness programme to group psychotherapy treatment	Randomised control trial; self-report questionnaires	35 incarcerated male youth (14–18 years)	Improved self-esteem and decision-making were statistically significant findings in experimental group
Himelstein, Saul, Garcia-Romeu, and Pinedo (2014)	USA	Determining how to teach mindfulness to incarcerated adolescents and investigating its effects on psychological mindedness and well-being	Semi-structured interviews	10 male inmates (15–18 years); participants were substance users	A mindfulness teaching framework was developed; mindfulness was found to improve psychological well-being and decision-making
Le and Proulx (2015)	USA	Investigating the acceptability of mindfulness and its effects on the stress levels and stress responses of incarcerated native	Self-report questionnaires; biological markers; personal reflection journals	33 youth inmates (8 males, 25 females)	Mindfulness helped to reduce stress and improve self-regulation; feasibility and acceptability was

(continued)

Table 1. (Continued)

Author	Country	Focus	Methodology	Sample	Key findings
Leonard et al. (2013)	USA	Hawaiian and Pacific Islander youth Comparing CBT and mindfulness group training to an active control intervention by examining the effects on attentional task performance	Randomised control trials; self-report questionnaires; Computerised Attention Network Test	264 male inmates (16–18 years)	concluded for the population. Mindfulness reduced the severity of attentional task performance degradation; the finding was multiplied when participants practised mindfulness meditation between sessions
Milani, Nikmanesh, and Farnam (2013)	Iran	Investigating the impact of mindfulness-based therapy on reducing aggression in incarcerated youth	Randomised control trial; self-report questionnaires	22 adolescent male inmates	A significant reduction in aggressive behaviour was identified in the experimental group

salivary cortisol levels decreased and secretory immunoglobulin A increased significantly post-mindfulness ($p < .05$). These results indicate decreased stress responses in the body, which further solidifies the theme that mindfulness-based practice reduces stress amongst incarcerated youth (Fan et al., 2009).

Self-regulation

A theme found in nine of the studies is that mindfulness-based interventions allow incarcerated youth to improve their emotional, cognitive and behavioural self-regulation (Barnert et al., 2014; Barrett, 2016; Himelstein et al., 2012a, 2012b, 2014, 2015; Le & Proulx, 2015; Leonard et al., 2013; Milani, Nikmanesh, & Farnam, 2013). The studies of Barnert et al. (2014) and Himelstein et al. (2012a) found a statistically significant increase in emotional self-regulation after the completion of a mindfulness programme ($p = .01$ and $p < .01$, respectively). A statistically significant improvement in decision-making skills ($p = .01$) and behaviour ($p < .05$) was also found (Himelstein et al., 2015). These findings are consistent with the self-reported experiences of the youth in this study who describe various feelings of being more in control of themselves: 'I can control myself' (Himelstein et al., 2012a, p. 159); 'I'm able to control my emotions a little better' (Himelstein et al., 2012b, p. 234); 'instead of reacting I can just stop, think about it' (Himelstein et al., 2014, p. 566). Participants found that using mindfulness techniques like breathing exercises helped them to pause and think, allowing them to control their actions (Barrett, 2016; Milani et al., 2013). Mindfulness-based interventions also improved attention control, which allowed participants to increase their awareness of feelings and their regulated responses (Leonard et al., 2013). Overall, there is evidence that mindfulness-based interventions can help incarcerated youth to regulate their emotions by increasing their inner awareness.

Anger management

Mindfulness as a strategy to aid young people in responding positively to anger and aggression is a strong theme in six of the studies (Barnert et al., 2014; Himelstein et al., 2012b, 2014, 2015; Milani et al., 2013; Kimonis, Ray, Brach and Cauffman, 2010). This theme is significant, as it is known that incarcerated youth are prone to aggressive behaviour due to having poor coping strategies (Purcell, 2007, cited in Kimonis, Ray, Branch, & Cauffman, 2010). Milani et al. (2013) observed reduced anger, aggression and physical hostility in the members of the mindfulness group compared to increased aggressive behaviours in the members of the control group, who received no form of mindfulness training. This trend was also seen by Himelstein et al. (2015). The qualitative data suggests that improved self-discipline through mindfulness is also seen as engendering anger management in youth, as one participant explains: '[the mindfulness programme] showed me I could do anything I want to if I discipline myself' (Barnert et al., 2014, p. 71). In situations that provoke anger, participants describe how they are able to be calmer: 'when something's bothering me ... I was trying to meditate so I could calm down, and so I can relieve all that, that madness' (Himelstein et al., 2014, p. 566). It is concluded that mindfulness can train youth to accept anger as an emotion and use cognitive skills to respond less aggressively (Milani et al., 2013). This research suggests that mindfulness has a role in enabling incarcerated youth to develop positive strategies for managing anger and aggressive impulses.

Acceptability

In seven of the studies, participants' feedback indicated the acceptability of the mindfulness-based programmes (Barnert et al., 2014; Barrett, 2016; Himelstein, 2011; Himelstein et al., 2012a, 2012b, 2014; Le &

Proulx, 2015). One participant expresses: 'It really opened a different sector for me, such as seeing things in a different perspective, how to analyze it, just see it from different points of view. It really helped me out' (Himelstein et al., 2012a, p. 159). Participants found the interventions to be a positive experience, calming and helpful for stress and self-regulation, creating an openness and receptiveness to mindfulness-based interventions (Barrett, 2016; Himelstein, 2011; Himelstein et al., 2012b, 2014; Le & Proulx, 2015). Himelstein's (2011) participants commented on their appreciation of the style of facilitation and the feeling of safety when engaging in mindfulness activities. Intentions for the continuation of mindfulness practices were also found (Barnert et al., 2014). Participants had the opinion that other inmates should experience these mindfulness-based activities as well (Himelstein et al., 2012a, 2012b). These findings strengthen the theme that mindfulness-based practice is accepted by incarcerated youth.

Discussion

The current body of literature suggests that mindfulness interventions are feasible for the incarcerated youth population (Himelstein, 2011; Himelstein et al., 2012a; Le & Proulx, 2015). The four identified themes of acceptability, stress reduction, self-regulation and anger management indicate that these mindfulness interventions were a positive and beneficial experience for the youths who took part in the studies. In several studies the positive impact is particularly explicit, as the members of the control group – who did not experience the intervention – did not exhibit the same outcomes of reduced stress, improved regulation of emotions and decreased aggression that were observed in the members of the mindfulness group (Himelstein et al., 2015; Leonard et al., 2013; Milani et al., 2013).

It is important to note, however, that some participants were initially resistant to

meditative practices and found them challenging and difficult (Barnert et al., 2014; Himelstein et al., 2014). When conducting mindfulness-based interventions, therefore, it should be acknowledged that some participants may experience difficulties and hence that additional guidance needs to be available. Additionally, some studies did not find a statistically significant improvement in the self-regulatory scores related to impulsivity and behaviour, although the overall trends were favourable (Barnert et al., 2014; Himelstein, 2011; Le & Proulx, 2015).

In some cases, methodological limitations have contributed to the tentative findings. Although the general quality of the studies is good, only half of them use a control group that received either no intervention or alternative forms of psychotherapy. An additional limitation is that nine of the studies have small sample sizes ranging from 10 to 48 participants, thus lowering the power of the results and limiting both the external validity and the generalisability to wider incarcerated youth populations. Furthermore, the results cannot be generalized to the incarcerated female youth population.

The nature of the setting of these studies influenced the completion rates and ability to conduct follow-up assessment due to participants being released from the youth detention centres (Himelstein, 2011; Himelstein et al., 2014). Due to the characteristics of the study settings and the sample of incarcerated youth, it is worth remembering that from an ethical perspective it may not always be possible to incorporate large sample sizes, follow-up studies and the use of control groups.

Regardless of the above limitations, this literature review indicates that there is a good basis for the introduction of mindfulness-based activities into youth incarceration facilities. The incarcerated youth in the studies reviewed herein generally responded positively to the mindfulness interventions, experiencing reduced stress and improved self-regulation and ability to manage anger. There is some evidence that improved basic

responses to high stress and tense situations can reduce recidivism (Malouf, Youman, Stuewig, Witt, & Tangney, 2017), which suggests that the implementation of mindfulness-based interventions could contribute to a reduction in youth reoffending. Furthermore, Barnert, Perry, and Morris (2016) posit that it is important to improve the mental and physical health of incarcerated youth, as level of health is proportionate to success rates when youth leave detention facilities – and using mindfulness-based interventions is a way to improve the health of incarcerated youth. Additionally, further research on the effectiveness of mindfulness-based programmes for incarcerated youth over a wider range of demographics – in particular females and ethnic minorities – is required. Longitudinal studies should also be conducted to explore the long-term implications of mindfulness interventions and their effect on reducing reoffending.

Conclusion

This literature review shows that mindfulness-based interventions result in beneficial outcomes for youth in the criminal justice system. The relevant evidence of mindfulness interventions for incarcerated youth was synthesized and four significant themes were identified: decreased stress, increased self-regulation, improved anger management and acceptability of the interventions on the part of the youth. Despite limitations in terms of sample size and generalisability to different demographics, the results of these studies are positive and support the implementation of further mindfulness interventions in youth incarceration facilities.

Ethical standards

Declaration of conflicts of interest

Rachel Murray has declared no conflicts of interest.
Rebecca Amann has declared no conflicts of interest.
Katey Thom has declared no conflicts of interest.

Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors.

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