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Mindfulness and its Potential Application on Offenders in Care

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Mindfulness practices have a long history, an estimation of 2,500 years, coming under significant scientific and clinical scrutiny in the last 20 years.[1, 2] **Mindfulness is arguably the most influential and best researched third wave area of clinical practice.**[3, 4] **Anecdotal use of therapy has been used in care settings for some time, however empirical examination is needed for it to be certified.**[5] **This article will identify the use of mindfulness on areas that are best suited for the treatment of offenders in care with mental health issues and then focus upon its potential application on serious crimes, such as inappropriate sexualised behaviour and physical harmful behavior.**[6] **These crimes have or may have occurred because of increased impulsivity, substance misuse, and a deficit in emotional regulation.**[7, 8]

Focused offending treatment and rehabilitation programmes, for example, for sex offending and violence, have become established across criminal justice systems. In general these programmes have had theoretical orientation around the cognitive-behaviour approach, reflecting the conclusion of many outcome studies that cognitive-behavioural interventions have been demonstrated to be effective.[9] More recently, compassion-based interventions, strongly influenced by Buddhism, such as mindfulness, have also received attention through the empirical literature relating to therapeutic treatments.

Mindfulness training has become the most influential third-wave treatment approach because of the growing body of outcome literature including randomised-control trials, indicating an impact on recurrent depression,[10,11] general stress and range of psychodynamic conditions.[12] However, as previously mentioned, more empirical evidence needs to be completed in order for mindfulness to become an approved treatment.

Mindfulness has been suggested to be relevant for the treatment and rehabilitation for offenders in care in the past but lacks grounding evidence to support the suggestion. Howells et al[13] propose that there are three areas of criminological and clinical need. The three areas of criminological and clinical need are poor affective self-regulation, the related problem of anger control and impulsivity.[14] Poor affective self-regulation and anger control can also be categorised as poor emotional regulation.[15] Such problems appear to be severe in offenders with personality disorder.[16] Similarly, rumination, defined as 'repetitive, uncontrollable thoughts about negative internal or external experiences', has been

1. Kabat-Zinn, J., *Mindfulness-Based Interventions in Context: Past, Present and Future.* Clinical Psychology: Science and Practice, 2003. 10: p. 125–143.
2. Jon, K.-Z., *Coming to Our Senses: Healing Ourselves and the World Through Mindfulness*. 2005: Hyperion.
3. Howells, K., *The 'Third Wave' of cognitive behaviour therapy and forensic practice.* Journal: Criminal behaviour and Mental Health, 2010. 20(4): p. 251.
4. Childs, D., *Mindfulness and Clinical Psychology.* Psychology and Psychotherapy: Theory, Research and Practice, 2011. 84: p. 288–298.
5. Howells, K., et al., *Mindfulness in Forensic Mental Health: Does It Have a Role?* Mindfulness, 2010. 1: p. 4–9.
6. Singh, N., et al., *Mindfulness Approaches in Cognitive Behavior Therapy.* Behavioural and Cognitive Psychotherapy, 2008. 36(06): p. 659–666.
7. Fehrer, F., *The Awareness Response: A Transpersonal Approach to Reducing Maladaptive Emotional Reactivity.* 2002, Institute of Transpersonal Psychology: Palo Alto: California.
8. Howells, K., M. Daffern, and A. Day, *Aggression and Violence.* Handbook on Forensic Mental Health, ed. K. Soothill, M. Dolan, and P. Roger. 2008, Cullompton, Devon: Willan.
9. Hollin, C. and E. Palmer, *Criminogenic Need and Women Offenders: A Critique of the Literature.* Legal and Criminoligical Psychology, 2006. 11: p. 179–195.
10. Teasdale, T., et al., *Prevention of Relapse/Recurrence in Major Depression by Mindfulness-Based Cognitive Therapy.* Journal of Counselling and Clinical Psychology, 2000. 68(4): p. 615–623.
11. Kuyken, W., et al., *Mindfulness-based Cognitive Therapy to Prevent Relapse in Recurrent Depression.* Journal of Consulting and Clinical Psychology, 2008. 76(6): p. 966–978.
12. Day, A., *Offender emotion and self-regulation: Implications for offender rehabilitation programming*. Psychology; Crime and Law, 2009. 15(2–3): p. 119–130.
13. Howells, K., et al., *Mindfulness in Forensic Mental Health: Does It Have a Role?* Mindfulness, 2010. 1: p. 4–9.
14. Wright, S., A. Day, and K. Howells, *Mindfulness and the treatment of anger problems.* Aggression and Violent Behaviour, 2009. 14: p. 396–401.
15. Farrington, C.J., *Individual differences and offending.* 2000: p. 241–268.
16. Association, A.P., *Diagnostic Manual of Mental Disorders*. 5 ed. 2013, Arlington, VA: American Psychiatric Association.

shown to relate reliably to anger, hostility and aggression. Given the focus in mindfulness training on improving awareness and control of such thoughts, it has obvious potential as a therapeutic intervention for forensic mental health patients, with some support from experimental studies in normal populations[17].

There have been several reviews of the effectiveness of mindfulness training. Teasdale et al[18] review the evidence that mindfulness, in relation to treatment of recurrent depression, has concrete support in terms of the underlying theoretical model and controlled studies of treatment outcome. Dimidijan et al[19] support this evidence through their study and findings. Mindfulness-based cognitive therapy (MBCT) has been identified as an effective treatment for recurrent depression by the National Institute of Clinical Excellence (NICE) in the United Kingdom.[20] Given that the positive evidence has been predominantly in relation to improving negative affective states, the later being a factor contributing to criminogenic and clinical problems in forensic populations.

What is Mindfulness?

Mindfulness practice has been inherited from Buddhist tradition. Mindfulness is described as a moment-by-moment awareness of thoughts, feelings, and bodily sensations within the surrounding environment. It has been characterised by the term 'acceptance', which brings attention to thoughts and feelings without judging whether they are right or wrong. Mindfulness involves intentionally bringing one's attention to their internal and external experiences occurring in the present moment, and is often taught through a variety of meditation exercises.[21,22,23] The phenomenon that enters a person's awareness during a period of mindfulness meditation such as perceptions, cognitions, emotions and sensations should be observed carefully but not evaluated as good or bad, true or false, healthy or sick, or important or trivial. Mindfulness focuses on the bodily communications and what is being sensed at each moment instead of its common reflection on the past or on the future.[24] This will be particularly useful for the offenders in care due to the apprehension of their future, resultant from past actions that have been previously judged upon.

The use of mindfulness therapy is still in infancy as it has begun evolving within contemporary mainstream psychology. Although it has based its roots from Buddhist meditation, it has developed itself within cognitive-behaviour therapy. Mindfulness based therapies encourages patients to integrate these mindfulness skills into their everyday lives. Regular practice of meditation is recommended by eastern spiritual tradition as a method of reducing symptoms of their psychological disorder.25 Until recently, mindfulness has been a relatively unfamiliar concept in western culture perhaps due to its roots in eastern philosophy and Buddhism.[26,27,28]

Mindfulness has room for expansion as it is a relatively new therapy and concept within cognitive-behaviour therapy. Brown, Ryan and Cresswell[29] comment on this as they see mindfulness as prolonging the early stage in information processing: 'to prolong that initial contact with the world' (p212). This suggests that it brings naivety and an innocent outlook on the surrounding environment, instead of the tainted outlook they may previously had. However, most people's experience of mindfulness training sees the process as learning to weaken discursive and evaluative thinking. This can be described as a clear conceptualisation of abandoning future, sometimes unrealistic or anxiety provoking, targets and bringing their personal attention to the present.

With the rapid development of research into the area of mindfulness, the investigation of the use of mindfulness as a rehabilitation psychotherapy has also been in slow progress in forensic populations.[30] On the other hand, mindfulness-based interventions have

17. Borders, A., Earleywine, M. and Jajodia, A., *Could mindfulness decrease anger, hostility, and aggression by decreasing rumination?*. Aggr. Behav. 2010, 36: p 28–44.
18. Teasdale, T., et al., *Prevention of Relapse/Recurrence in Major Depression by Mindfulness-Based Cognitive Therapy.* Journal of Counselling and Clinical Psychology, 2000. 68(4): p. 615–623.
19. Dimidjian, S. and M. Lineham, *Mindfulness Practice.* Empirically Supported Techniques of Cognitive Behavior Therapy: A Step-By-Step Guide for Clinicians, ed. W. O' Donohue, J. Fisher, and S. Hayes. 2010, New York: John Wiley & Sons.
20. Kuyken, W., et al., *Mindfulness-based Cognitive Therapy to Prevent Relapse in Recurrent Depression.* Journal of Consulting and Clinical Psychology, 2008. 76(6): p. 966–978.
21. Jon, K.-Z., *Coming to Our Senses: Healing Ourselves and the World Through Mindfulness*. 2005: Hyperion.
22. Kuan, T.-F., *Mindfulness in Early Buddhism: New Approaches Through Psychology and Textual Analysis of Pali, Chinese and Sanskrit Sources.* 2007, Routledge.
23. Siegel, R., *The Mindfulness Solution; Everyday Practices for Everyday Problems.* 2010: The Guilford Press.
24. Marlett, G. and J. Kristeller, *Mindfulness and Meditation.* Integrating Spirituality into Treatment: Resources for Practitioners, ed. W.
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27. Kuan, T.-F., *Mindfulness in Early Buddhism: New Approaches Through Psychology and Textual Analysis of Pali, Chinese and Sanskrit Sources.* 2007, Routledge.
28. Siegel, R., *The Mindfulness Solution; Everyday Practices for Everyday Problems.* 2010: The Guilford Press.
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examined the rehabilitative effects of other Buddhist-derived approaches within offending populations.

A systematic review by Shonin et al[31] compared Vipassana Meditation and mindfulness as Buddhist-derived interventions in correctional settings. The review found that the participants demonstrated significant improvements across five key criminological variables: negative effect, substance use, anger and hostility, relaxation capacity and self-esteem and optimism. Therefore, it could be concluded from this particular review that Buddhist-derived interventions may be feasible and an effective rehabilitation intervention for offenders in care. However in this review, it is recommended that ethical issues are overcome. These are relating to randomisation in correctional settings as some interventions proved to be less favoured by participants.

Buddhist-derived interventions for offender rehabilitation are based on the transformative aspects of Buddhist practice. These aspects have been empirically and informally evidenced within forensic and clinical settings.[32] Herein Buddhist-derived interventions have been shown to modulate known criminological variables, such as negative affective states,[33] anger,[34] hostility,[35] criminal thinking,[36] and impulsivity and deficiencies in emotional regulation.[37] Forensic mental health patients hold these variables in their traits,[38] therefore it could be said that Buddhist-derived interventions maybe of some benefit.

Previously, Waters et al[39] has reported that mindfulness has also been seen to reduce stress and anxiety, and improve self-esteem and psychological wellbeing. Wright, Day and Howells[40] continue on to say that improved self-awareness and present moment awareness are factors that reduce impulsivity. This has been noted when practicing mindfulness, greater self-awareness also corresponds to an increased ability to label and therefore modulate affective states.[41]

Derezotes[42] and Sumpter et al[43] support the notion that frequent practice of Buddhist forms of meditation are found to help promote inner-calm, consequently improve sleep-quality. Sleep quality is found to lead to reductions in autonomic aid and psychological arousal, subsequently, decreasing impulsivity in offenders by reducing arousal in the body and mind. Furthermore, increased breathing awareness during meditation is shown to increase prefrontal functioning and reductions in cardiac frequency, therefore an increase in rational thinking. Offenders in care would benefit from this due to decreased impulsivity and increase in emotional regulation.

The Dalai Lama[44] expands on this by explaining that compassion, loving-kindness, and ethical discipline represent key building blocks of Buddhist practice and help to foster self-acceptance, tolerance, cooperation, respect, and adaptive interpersonal skills. This leads to the conclusion that meditation aids the detachment of the ego-self, therefore reductions in avoidance, disassociation, and a composed philosophical outlook on life.[45] This can improve control over mental urges and impulsivity such as substance abuse and sexual offending.

A number of uncontrolled studies support this view and provide early evidence for the suitability of Buddhist-derived interventions for offenders in care with more specific criminological needs and traits. For example, Buddhist-derived interventions have been shown to improve the rehabilitation of offending adolescents.[46,47]

31. Shonin, E., et al., *Mindfulness and other Buddhist-derived interventions in correctional settings: A systematic review.* Journal: Aggressive and violent behaviour, 2013. 18: p. 365–372.
32. Shonin, E., et al., *Mindfulness and other Buddhist-derived interventions in correctional settings: A systematic review.* Journal: Aggressive and violent behaviour, 2013. 18: p. 365–372.
33. Day, A., *Offender emotion and self-regulation: Implications for offender rehabilitation programming.* Psychology; Crime and Law, 2009. 15(2-3): p. 119–130.
34. Novaco, R.W., *Anger Dysregulation.* Anger, Agression, and Intervention for Interpersonal Violence, 2007: p. 3–54.
35. Perelman, A.M., et al., *Meditation in a deep south prison: A longitudinal study of the effects of vipassana.* Journal of Offender Rehabilitation, 2012. 51: p. 176–198.
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38. Howells, K., et al., *Mindfulness in Forensic Mental Health: Does It Have a Role?* Mindfulness, 2010. 1: p. 4–9.
39. Waters, A.J., et al., *Associations between mindfulness and implicit cognition and self-reported affect.* 2009. p. 328–337.
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41. Gillespie, S.M., et al., *Treating disturbed emotional regulation in sexual offenders: The potential applications of mindful self-regulation and controlled breathing techniques.* Aggression and Violent Behaviour, 2012. 17: p. 333–343.
42. Derezotes, D., *Evaluation of yoga and meditation trainings with adolescent sex offenders.* Child and Adolescent Social Work Journal, 2000(17): p. 97–113.
43. Sumpter, M.T., E. Monk-Turner, and C. Turner, T*he benefits of meditation practice in the correctional setting.* Journal of Correctional Health Care, 2009. 15: p. 47–57.
44. Lama, D., *Stages of Meditation: Training the Mind for Wisdom*. 2001, London: Rider
45. Sahdra, B.K., P.R. Shaver, and K.W. Brown, *A scale to measure nonattachement: A Buddist complement to western research on attachement and adaptive functioning.* Journal of Personality Assessment, 2010. 92: p. 116–127.
46. Himelstein, S., *Mindfulness-based substance abuse treatment for incarcerated youth: A mixed method pilot study.* International Journal of Transpersonal Studies, 2011(30): p. 1–16.
47. Himelstein, S., et al., *Mindfulness training for self-regulation and stress with incarcerated youth: A pilot study.* Probation Journal, 2012(59): p. 151–165.

Despite the inevitable complications of integrating Buddhist-derived interventions into settings, group based Buddhist-derived interventions are likely to represent a viable therapy due to their cost-effective nature.

Mindfulness and impulsive behaviour and substance abuse

Impulsive behaviour is a key feature in forensic populations.[48,49] Research proposes that maladaptive impulsive behaviour, in which individuals with mental health disorders commit, serves as a coping mechanism in an effort to avoid or escape from strong emotions.[50] The maladaptive behaviour of self-harm is highly common among individuals with mental health disorders. Although self-harm may not lead to offending behaviour, it is important to note the severity of the disorder and the corresponding maladaptive behaviours.

Gratz and Tull[51] states that research also indicate that impulsive behaviour, such as substance abuse, is high among offenders in care. It has been recorded that substance use is a means of self-medicating and can be used as a method of escape from distressing emotions. Perhaps one of the most pressing concerns in the treatment of offenders in care presently, is the finding a suitable therapy which will create a reduction of such maladaptive behaviours, in particular parasuicidal acts and self-harming behaviours.[52]

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Mindfulness helps to control these maladaptive behaviours. This is because it focuses on teaching an individual to control attention and develop a sense of awareness and attune to a sense of self.[53] Ivanoff et al[54] states that mindfulness enables patients to simply observe and then describe external and internal stimuli. This ability is incredibly beneficial for offenders, because impulse control can be acknowledged and aid the recognition of affective states by simply observing emotions as being 'just emotions'. Therefore offenders may be less inclined to engage in impulsive maladaptive behaviours to block out painful emotions as they understand and accept them.

In addition to this, Breslin et al[55] suggests that mindfulness skills may be a useful treatment for substance abuse. Breslin et al state that mindfulness may function as an exposure strategy and through attention and observation of emotions, individuals can extinguish automatic avoidance of negative thoughts and emotions that can lead to maladaptive behaviours. With negative states often encouraging substance use, mindful attention to drug relevant cues, coupled with a non-avoidant response may desensitise an individual to the effects of emotional stress.

Supporting this research, Bowen et al[56] found results that sustain mindfulness reduce substance abuse. Bowen et al conducted a randomly controlled trial to see how helpful mindfulness training was in decreasing substance abuse compared to a control group who received treatment as usual. The mindfulness training included focused breathing and observation of emotional experience. Results concluded that there was a significant link between mindfulness training and decreased substance abuse in comparison to those who took part on treatment as usual. This is beneficial research in clinical practice, as it is known that substance abuse can lead to uncontrollable and accelerated offending traits, such as aggression, hostility and fundamentally physical violence.[57] Therefore this research encourages the use of mindfulness therapy as it is shown to reduce impulsivity, and subsequently substance abuse.

48. Association, A.P., *Diagnostic Manual of Mental Disorders.* 5 ed. 2013, Arlington, VA: American Psychiatric Association.
49. Howells, K., M. Daffern, and A. Day, *Aggression and Violence.* Handbook on Forensic Mental Health, ed. K. Soothill, M. Dolan, and P. Roger. 2008, Cullompton, Devon: Willan.
50. Chapman, A., M. Specht, and T. Cellucci, *Borderline Personality Disorder and Deliberate Self-Harm: Does Experimental Avoidance Play a Role?* Suicide and Life – Threatening Behaviour, 2005. 33: p. 388–400.
51. Gratz, K. and M. Tull, *The Relationship Between Emotion Dysregulation and Deliberate Self-Harm Amoung Inpatients with Substance Use Disorders.* Cognitive Therapy and Research, 2010. 34(6): p. 544–553.
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54. Ivanoff, A., M. Lineham, and M. Brown, *Dialectical Behavior Therapy for Impulsive Self-Injurious Behaviors*. Self-Injurious Behaviors: Assessment and Treatment, ed. D. Simeon and E. Hollander. 2001: American Psychiatric Publisher. 224.
55. Breslin, F., M. Zack, and S. McMain, *An Informaion Processing Analysis of Mindfulness: Implications for relapse Prevention in the Treatment of Substance Abuse.* Clinical Psychology for Scientific Practice, 2002. 9: p. 275–299.
56. Bowen, S. et al. *Mindfulness meditation and substance use in an incarcerated population. Psychology of Addictive Behaviors.* 2006. 20: p 343–347.
57. Association, A.P., *Diagnostic Manual of Mental Disorders.* 5 ed. 2013, Arlington, VA: American Psychiatric Association.

Moore and Malinowski[58] hypothesised that as mindfulness is dependent on attention on a moment-to-moment basis, mindfulness training should lead to increased cognitive flexibility, which subsequently would increase the ability to respond to unexpected emotional events in a non-impulsive and maladaptive way. With mindfulness increasing cognitive flexibility, the therapy could be incredibly useful for offenders in care in allowing them to deal with emotions in a more flexible and productive way, inhibiting the use of maladaptive impulsive behaviours, often used as a means of escape and consequently offending behaviour.

Mindfulness and emotional regulation

There is evidence to suggest that practicing mindfulness can increase adaptive emotional regulation,[59,60] which is implied to be a key deficit in offenders in care.[61]

Emotional regulation strategies aided by mindfulness has been increasingly developed within literature over the last few years.[62] Characteristically, emotional regulation strategies alter thoughts and behaviours in order to address the source of distress. These strategies can be supported through mindfulness techniques, exposure and acceptance, which are found to aid the recognition that distressing thoughts are not always accurate representations on reality.[63,64] This is consistent with Buddhist concepts, as deliberately attending to personal experience and not avoiding them,[65] facilitates insight into ones emotional life which can enable an individual to release themselves from destructive mental states.[66] These mental states hindered by poor emotional regulation can be identified within offending populations.

Mindfulness appears to have a positive effect on emotional regulation skills, demonstrated by its negative associations with emotion-related symptoms such as depression, anxiety, and trauma symptoms. Brown and Ryan[67] note that mindfulness has also a positive effect on well-being. There is evidence that mindfulness helps develop effective emotional regulation in the brain.[68,69] Corcoran et al[70] propose mindfulness creates mechanisms of change through metacognitive awareness, decreases in rumination and enhancement of attention capacities through gains in working memory, which Cocoran et al[71] state contribute to effective emotion regulation strategies. Results from numerous investigations confirm this hypothesis.

In terms of using mindfulness, as an emotional regulation aid for offenders in care, it has some supporting evidence. Researchers and clinicians alike are consistent in the opinion that sexual offenders are typified by problems in the regulation of negative affective states[72,73,74] suggest that deficits in the regulation of affective states may contribute to the offence process. Howells et al[75] continues explain that 'Whilst it may seem intuitively obvious that anger, for example, might increase the risk of certain types of offending, such as violence or rape, it is less apparent why a person in a state of unhappiness or distress might be at risk, especially when the behavioural reactions associated with such feelings typically involve avoidance, inactivity, or flight rather than

58. Moore, A. and P. Malinowski, *Meditation, Mindfulness, and Cognitive Flexibility*. Consciousness and Cognition, 2009. 18: p. 176–186.
59. Farb, N., et al., *Minding One's Emotions: Mindfulness Training Alerts the Neural Expression of Sadness.* Emotion, 2010. 10: p. 25–33.
60. Siegel, D.J., *Mindfulness training and neural integration: Differentiation of distinct streams of awareness and the cultivation of well-being.* Social Cognitive and Affective Neuroscience, 2007. 2(4): p. 259–263.
61. Howells, K., M. Daffern, and A. Day, *Aggression and Violence.* Handbook on Forensic Mental Health, ed. K. Soothill, M. Dolan, and P. Roger. 2008, Cullompton, Devon: Willan.
62. Roemer, L., et al., *Mindfulness and Emotion Regulation Difficulties in Generalized Anxiety Disorder: Preliminary Evidence for Independent and Overlapping Contribution.* Behavior Therapy, 2009. 40(2): p. 142–154.
63. Lineham, M., *Cognitive-Behavioral Treatment of Borderline Personality Disorder.* 1993, New York: Guilford.
64. Teasdale, T., et al., *Prevention of Relapse/Recurrence in Major Depression by Mindfulness-Based Cognitive Therapy.* Journal of Counseling and Clinical Psychology, 2000. 68(4): p. 615–623.
65. Jon, K.-Z., *Coming to Our Senses: Healing Ourselves and the World Through Mindfulness.* 2005: Hyperion.
66. Ekman, P., et al., *Buddhist and Psychological Perspectives on Emotions and Well-Being.* Current Directions in Psychological Science, 2005. 14: p. 59–63.
67. Brown, K.W. and R.M. Ryan, *The benefits of being present: Mindfulness and its role in psychological well-being.* Journal of Personality and Social Psychology, 2003. 84(4): p. 822–848.
68. Farb, N., et al., *Minding One's Emotions: Mindfulness Training Alerts the Neural Expression of Sadness.* Emotion, 2010. 10: p. 25–33.
69. Siegel, D.J., *Mindfulness training and neural integration: Differentiation of distinct streams of awareness and the cultivation of well-being.* Social Cognitive and Affective Neuroscience, 2007. 2(4): p. 259–263.
70. Corcoran, K., et al., *Mindfulness and Emotion Regulation: Outcomes and Possible Meditating Mechanisms.* Emotion Regulation and Psychopathy: A Transdiagnostic Approach to Etiology and Treatment, ed. A. King and D. Sloan. 2010, New York: Guilford Press.
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72. Langton, C. and W. Marshall, *The Role of Cognitive Distortions in Relapse Prevention Programmes.* Remaking Relapse Prevention with Sex Offenders: A Sourcebook, ed. D. Laws, S. Hudson, and T. Ward. 2000, Thousands Oaks, California: Sage.
73. Marshall, W., et al., *Self-Esteem and Coping Strategies in Child Molesters.* Journal of Interpersonal Violence, 1999. 14: p. 955–962.
74. Smallbone, S. and M. Dadds, *Attachment and Coercive Sexual Behavior.* Sexual Abuse: A Journal of Research and Treatment, 2000. 12: p. 3–15.
75. Howells, K. *Anger and Its Links to Violent Offending*. Psychiatry, Psychology and Law. 2004, 11(2).

acting out in the form of assault or other offence' (p.186). This quote supports the stance that emotional regulation deficit is common among offenders and can be treated therapeutically with the application of mindfulness.

In addition to examining the effects of mindfulness on emotional regulation and impulsivity for those offenders in care, it is possible to look more directly at how mindfulness techniques can alter brain function. Several studies have showed that mindfulness can alter levels of neural activity in the Prefrontal Cortex and the Amygdala using brain-imaging techniques. Chiesa and Serretti,[76] in a systematic review of the neurobiological and clinical features of mindfulness, found that mindfulness practice causes regular activation of the Amygdala and Prefrontal Cortex. Plus that long-term meditation is associated with enhanced activity in the cerebral areas related to attention. Davidson et al[77] support this view as they report a pattern of cerebral activation that is associated with positive affect in meditators compared with non-mediators. Similarly, Lazer et al[78] demonstrated that mindfulness is associated with increased thickness of the prefrontal cortex and anterior insula, areas that are labelled as being involved with the processing of high level primitive information. This can explain how mindfulness controls emotional regulation instead of having high and irregular activation in these brain functional areas, therefore promising application to forensic mental health patients as it reduces anger, hostility and offending.

Mindfulness and sexual offending

In the early 1980s research began on the treatment of sexual offenders. However, this did take the form of punishment.[79,80] Subsequent research has shown that harsh responses to crime actually increase, rather than reduce, re-offence rates.[81] Furthermore, there is convincing evidence that treatment for all types of criminals can effectively reduce recidivism.[82,83] For sexual offenders, the evidence is gathering to suggest that treatment can be effective.[84] Mindfulness is still in its youth in this context, but some evidence has been found on offenders and previous sexual offences.

It is understood from various studies and periodic reports from the criminal justice system that sexual offenders should be provided with training and treatment to lessen the risk of further sexual offences.[85,86,87] Previous therapeutic interventions, were again, based around cognitive-behaviour therapy and demonstrated positive results.[88,89,90] Earlier studies used a number of different approaches, including problem solving, challenging denial and mitigation of the offence, changing thought (relating to masturbation), appropriate assertiveness, self-control procedures, and the avoidance of risky situations. These factors can be disentangled by the use of mindfulness training as patients accept their thoughts in a non-judgmental manner and subsequently control their actions in an appropriate conduct.[91,92,93]

Previously, to treat sexual offending, hormone interventions were used in institutions. The suggestion

76. Chiesa, A. and A. Serretti, *A Systematic Review of Neurobiological and Clinical Features of Mindfulness Meditations.* Psychological Medicene, 2010. 40(8): p. 1239–1252.
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87. Lindsay, W. and J. Taylor, *A Selective Review of Research on Offenders with Developmental Disabilities: Assessment and Treatment.* Clinical Psychology and Psychotherapy, 2005. 12: p. 201–214.
88. Craig, L., I. Stringer, and T. Moss, *Treating Sexual Offenders with Learning Disabilities in the Community.* International Journal of Offender Therapy and Comparative Criminology, 2006. 50: p. 369–390.
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90. Rose, J., et al., *A Group Treatment for Men with Intellectual Disabilities who Sexually Offend or Abuse.* Journal of Applied Research in Intellectual Disabilities, 2002. 15: p. 138–150.
91. Langton, C. and W. Marshall, *The Role of Cognitive Distortions in Relapse Prevention Programmes.* Remaking Relapse Prevention with Sex Offenders: A Sourcebook, ed. D. Laws, S. Hudson, and T. Ward. 2000, Thousands Oaks, California: Sage.
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in literature indicates that hormone interventions may reduce sexual assault and public masturbation on individuals.[94] Hormone interventions may also decrease the intensity and frequency of sexual fantasy and sexual behaviours in the population.[95] Although hormone interventions have shown to be effective, they have shown a decrease in appropriate and inappropriate sexual arousal. This review will continue to explain how mindfulness therapy can aid the reduction in sexual offending in an appropriate manner, with or without hormone interventions.

It has been suggested by Howells[96] that mindfulness may represent a therapeutic alternative to traditional cognitive-behavioural interventions for sexual offenders. As explained previously, mindfulness can aid the emotional regulation of an individual. Many researchers and clinicians are also consistent with this opinion.[97,98,99] Howells, Day and Wright[100] imply that deficits in the regulation of affective states may contribute to the offense process. Furthermore, poor self-management and poor socio-affective functioning have been identified as risk factors associated with subsequent sexual offense recidivism, along with sexual interests and distorted attitudes.[101,102]

However, current literature suggests that sexual offenders may be able to voluntarily control their arousal and penile response during formal measurement for diagnostic classification. Kalmus and Beech[103] investigated this response by asking participants to process a neutral reaction to the viewing of pictures in provoking magazines, whilst testing their sexual arousal. In explanation, when deviant sexual thoughts arose in their minds, they told themselves that they were not thoughts and they did not have to react to them. Kalmus and Beech found that 80 per cent of participants were able to control their thoughts through a cognitive self-control strategy. Mindfulness-based interventions could stem from these findings as the treatments allows offenders to focus on one thing, such as breathing, as they accept and not judge the thoughts that may come to mind.

Singh et al[104] examined participants, who were classified as sexual offenders, inappropriate sexual arousal to the desired stimuli. Singh et al state that the process of becoming aroused by desire can be broken by inserting an incompatible behavior between the presence of the desired stimulus and the psychological and physical response that follows. They lead on to discuss the progress of using 'Meditation on Soles of the Feet' and 'Mindful observation of Thought' as self-control strategies. Participants were seen to learn to neither engage in, nor actively avoid, deviant sexual thoughts; they were to simply observe the thoughts as they occurred. The participants concluded that they found the shift in attention from the precursors of aggression to the precursors of deviant sexual arousal to be a challenge however they were able to show some degree of voluntary self-control when requested by the therapist. Although this study was relatively a self-report study, it could be suggested that physiological measures are needed to validate the participants self-report. Another limitation is the small participant group and the time spent in each treatment phase, therefore generalisation and reliability is questionable.

Hanson and Harris,[105] who in their study of sexual offenders on community supervision orders, found that reoffenders showed an increase in negative emotion, anger and general psychotic symptoms just prior to offending. More recently Wiesner, Kim, and Capaldi,[106] in their longitudinal research, identified a link between high levels of depressive symptoms and substance use in a sample of what they termed 'chronic high level' offenders. As mindfulness has shown to reduce the

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effects of depression by emotional regulation and impulsiveness, could be potentially adaptable to sexual offenders and their recidivism.[107]

Conclusion

Although mindfulness training is often delivered in clinical settings, the intervention itself is the product of Buddhism, a philosophical and psychological system, concerned not primarily with treatments for disorders, but with the enlightenment or psychological liberation of the ordinary person. A review conducted by Baer[108] suggests that mindfulness-based interventions are clinically efficacious, although more intricately designed studies are needed to substantiate the field and aid its growth. Bishop[109] supports this view as he also poses the question of when mindfulness can be certified as an approach, especially for offenders in care. This adds to the growing literature on mindfulness as a therapeutic modality,[110,111,112] although it was never intended to be used to revolutionise psychological distress in clinical and non-clinical populations, in an addition to assisting people to alter their consciousness. Instead it can be seen that mindfulness therapy may alleviate some traits in committing serious crimes, such as inappropriate sexualised offending and physical harmful behavior.[113] In addition to, how the crimes have or may have occurred because of increased impulsivity, substance misuse, and a deficit in emotional regulation.[114,115]

In summary, there is a demonstrable need for clinical practitioners to be aware of the rapid progress and accumulating evidence for mindfulness therapy training, in general clinical psychology. Mindfulness appears to meet the very clinical and criminogenic needs that have been identified in forensic populations, but for which therapeutic remedies are in short supply. The scientific task, however, of formally evaluating effectiveness of such methods has barely begun.

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