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Efficacy of Mindfulness-Based Cognitive Therapy on Impulsivity of Adults with Attention Deficit-Hyperactivity Disorder

Medical Science

KEYWORDS: adult attention deficit-hyperactivity disorder, impulsivity, mindfulness based cognitive therapy.

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ABSTRACT

Attention deficit-hyperactivity disorder (ADHD) is a childhood-onset psychiatric condition that often continues into adulthood. The present study was designed to investigate the effect of mindfulness based cognitive therapy (MBCT) on impulsivity of adults with ADHD. The research design of this study was quasi-experimental with pre test and post test of single group. 15 adults with ADHD were selected by convenient sampling method and were receiving mindfulness based cognitive therapy for 8 sessions. Barrat Impulsivity Scale (BIS), balloon analogue risk task and Go-No-Go Test were used as research tools for evaluating of impulsivity of participants in pre and post tests stages. The results of t-test showed a significant decrease in impulsivity of adults with ADHD after treatment with MBCT. In accordance with the findings of this study, MBCT is an effective strategy to reduce of impulsivity levels of adults with ADHD. In cases where reducing of impulsive behavior of adults with ADHD is targeted, MBCT can be used.

Introduction

Attention deficit hyperactivity disorder (ADHD) is a medical condition arising from perturbations in brain functioning that lead to an individual showing challenges in sustained attention, excessive non-goal directed motor activity and enhanced impulsivity. These results in signifi can't and substantial long and short term problems in daily life, including: social and interpersonal difficulties; poorer academic and vocational achievement and a much higher risk for negative life outcomes such as traffic accidents, drug abuse, marital discord and job losses (1). Like in any medical condition, these challenges play themselves out in complex social circumstances. Also, as in many medical conditions, ADHD is treatable. And, with the right treatments, provided over the necessary period of time, most people who have ADHD can recover and do well (2). The challenges that health providers have had in dealing with ADHD include: trying to ensure that the best science is used to help in the diagnosis and treatment of those who have ADHD, that those who require treatment receive it and that those who receive treatment get the most appropriate interventions to meet their unique needs (3). This can be a difficult challenge, because life is different for every person who has ADHD and thus treatment for each person needs to be provided in a manner that is both directed by the scientific evidence and based on their personal needs and strengths. There is a need for a clear and concise approach to a complex disorder such as Attention Deficit Hyperactivity Disorder (ADHD) (4). This guide combines the useful approaches used in different guidelines with the recent literature reviews, clinical expertise, and other web resources. Just how prevalent ADHD were in adults would remain controversial until 2005. One means of attempting to estimate adult prevalence is to determine, using longitudinal studies, the percentage of persistence of disorders in children followed into adulthood. Adult outcome studies of large samples of clinic-referred children with hyperactivity, or ADHD–combined type, are few in number. Only four follow-up studies have retained at least 50% or more of their original sample into adulthood (5). This theory suggests another implication for the management of ADHD. Only a treatment that can result in improvement or normalization of the underlying neuropsycho logical (neurogenetic) deficit in behavioral inhibition is likely to result in an improvement or normalization of the executive functions dependent on such inhibition. To date, the only existing treatment that can be medication, such as the use of stimulants or the nonstimulant atomoxetine (6). These improve or normalize the neural substrates in the prefrontal regions and related networks which likely underlie this disorder. Evidence to date suggests that this improvement or normalization in inhibition and some of the EF may occur as a temporary consequence of active treatment with stimulant medication, yet only during the time course the medication remains within the brain (7). Research shows that clinical improvement in behavior occurs in as many as 75 to 92% of thosewith ADHD and results in normalization of behavior in approximately 50 to 60% of these cases on average (8). The model of ADHD developed here, then, implies that medication is not only a useful treatment approach for the managementof ADHD but also the predominant treatment approach among those currently available because it is the only one known to produce such improvement/ normalization rates, albeit temporarily. It can also be reasoned that if ADHD results in an undercontrol of behaviorby internally represented forms of information via the EFs, then that information should be "externalized" as much as possible whenever feasible. It should be made physical outside of the individual once again, as it must have been in earlierdevelopment (9). The internal forms of information generated by the executive system,if they have been generated at all, appear to be extraordinarily weak in their ability to control and sustain the behavior of those with ADHD. Self-directed visual imagery, audition, and the other covert resensing activities that form nonverbalworking memory as well as covert self-speech, if they are functional at allin certain times and contexts, do not yield up information of sufficient power tocontrol behavior in this disorder (10). That behavior remains largely under the control of the salient aspects of the immediate context. The solution to this problem is not to nag those with ADHD to simply try harder or to remember what theyare supposed to be working on or toward (11). It is instead to take charge of that immediate context and fill it with physical cues comparable to their internal counterparts, which are proving so ineffective. In a sense, clinicians treating those with ADHD must beat the environment at its own game. Sources of highappealing distracters that may serve to subvert, pervert, or disrupt task-directed behavior should be minimized whenever possible. In their place should be cues,prompts, and other forms of information that are just as salient and appealing yetare directly associated with or an inherent part of the task to be accomplished.Such externalized information serves to cue the individual to do what he or she knows. The aim of this study also is to Efficacy of Mindfulness-Based Cognitive Therapy on Impulsivity of Adults with Attention Deficit-Hyperactivity Disorder.

Materials and Methods

The present study was a quasi-experimental study was a single-group pretest-posttest manner. So in this project, is the independent variable of mindfulness-based cognitive therapy and the dependent variable levels of impulsivity. Statistical population this research is all adult (over 18 years) diagnosed with attention deficit hyperactivity

disorder in the city of Sari in the second half-year 1394 to get treatment were referred to one of the clinic in the city. Of the statistical population of those 15 men qualify for the diagnosis of attention deficit hyperactivity disorder as example of this study, Barratt Impulsivity Scale and Balloon tests risk of and Bourne test as it assessment tools impulsivity in pre-tests were performed. All subjects diagnosed with attention deficit hyperactivity and without disruption were associated diagnosed by a psychiatrist or clinical psychologist who received the diagnosis. The average age of subjects is 24/31. Inclusion criteria for this study were: A) Volunteer consent for participating in research, B) Attention Deficit Hyperactivity Disorder diagnosis based on the diagnosis of a psychiatrist or clinical psychologist, C) Lack of psychiatric patients other than attention deficit hyperactivity based on semi-structured clinical interview for axis the first disorders in DSM-IV (SCID), D) Not having a medical condition requiring medication during the research, E) Not taking medications that affect attention deficit hyperactivity disorder coincides with the current intervention, F) No history of substance abuse and alcohol, G) Age between 18 to 55 years. Subjects for eight two-hour sessions of mindfulness-based cognitive therapy, respectively. Content of therapy sessions based on the Program and Training Guide of Mindfulness-Based Cognitive Therapy written by Segal et al., has been developed. The centerpiece of this therapy sessions in table (1) is provided. All participants in the process of post-test assessment tools in pre-impulsivity that has completed tests were carried out.

Table 1. A summary of the content of the sessions of mindfulness-based cognitive therapy in this study.

Sessions	Content of the sessions
First	Auto-guided participants were taught techniques of physical checking and physical verification of educational videos and tabs to practice at home, distributed
Second	Faced with obstacles meditation sitting was conducted. Exercise log will be explained pleasant during the week and the sheets will be distributed.
Third	Reload breathing with mindfulness practice, practice seeing and hearing is done for 5 minutes. Walk with universal consciousness technique and a 3-minute breathing space to the participants to be trained.
Fourth	Stay in the present review exercises, breathing awareness meditation, body, voice and mind as well as regular 3-minute breathing space and a 3-minute coping (when feeling intense Nakhvshanyd) practically runs.
Fifth	allowing the presence, Reload exercises, and perform sitting meditation awareness of breathing, body, sounds, ideas about the importance of acceptance and its features were discussed.
Sixth	Thoughts are not facts- Automatic recognition routines, frustrated with the lack of interest in previous activities, Escape or avoid situations of anxiety.
Seventh	self care- Previous techniques in this session such as a common practice that is used daily.
Eighth	Reload the content and use what you have learned.

Results

The present study examined the effectiveness of mindfulness-based cognitive therapy on impulsivity adults with attention deficit hyperactivity disorder has been done. Table (1) mean and standard deviation scores of the participants in index related to impulsivity measured at three test Barratt impulsivity, risk-taking bubble and not-Go-Go show.

Table 2. Mean and standard deviation scores at pre-test and post-test measuring variables

Variables	*Indicators*	*pre-exam*		*After the test*	
		Average	*Standard deviation*	*Average*	*Standard deviation*
Barratt Impulsivity	Overall impulsivity	80/47	11/35	65/82	12/73
	Disorganization	28/59	6/36	24/51	5/82
	Motor impulsivity	27/93	4/93	23/49	4/81
	Cognitive impulsivity	23/95	4/75	17/82	4/86
Risk taking balloon	Read inflating balloons burst	15/63	6/56	10/15	8/74
	Read the whole inflating balloons	29/38	9/72	27/93	9/41
	The number of balloons to save money	20/38	5/86	24/92	7/13
	The maximum number of blowing up a balloon	48/52	10/94	45/82	9/75
	The minimum number of inflating a balloon	2/74	1/94	2/61	1/74
Go-No-Go	Average reaction time Field	371/94	26/49	326/49	34/75
	Average reaction time error	179/41	17/92	138/49	19/25
	Call error	15/93	5/14	10/79	5/27

For analyzing research data and comparing the test scores and subscale of the participants before and after the mindfulness-based cognitive therapy also paired t-test was used (Table 3).

Table 3. Results t-test for comparing scores of Impulsivity participants before and after treatment Mindfulness

Variables	*Indicators*	*Number*	*T statistic*	*df*	*sig*
Barratt Impulsivity	Overall impulsivity	15	7/59	14	0/001
	Disorganization	15	3/47	14	0/001
	Motor impulsivity	15	3/84	14	0/001
	Cognitive impulsivity	15	4/26	14	0/001
Risk taking balloon	Read inflating balloons burst	15	4/15	14	0/013
	Read the whole inflating balloons	15	0/473	14	0/754
	The number of balloons to save money	15	-3/16	14	0/011
	The maximum number of blowing up a balloon	15	1/59	14	0/137
	The minimum number of inflating a balloon	15	1/52	14	0/142
Go-No-Go	Average reaction time Field	15	4/93	14	0/001
	Average reaction time error	15	4/13	14	0/001
	Call error	15	3/49	14	0/001

As the results indicated by Table 3 shows, in all the indicators measured in the Barratt Impulsivity Scale, before and after the mindfulness-based cognitive therapy there is a significant difference. These findings are consistent with the general impulsivity, disorganization, impulsivity and attention deficit hyperactivity disorder, cognitive and motor adults with cognitive therapy Mindfulness Based on this study, was significantly increased. In impulsivity indicators measured on a test bubble Risk taking in the two main criteria of this test is an indicator of the respondent's impulsive behavior, The index number of balloons inflating balloons burst and save money, A significant difference between the performance of the study participants before and after the mindfulness-based cognitive therapy were observed. Impulsivity in mindfulness-based cognitive therapy samples compared to pre-

treatment significantly decreased.

Discussion and conclusion

The present study was to determine the effectiveness of mindfulness-based cognitive therapy in adults with attention deficit hyperactivity impulsivity is done. As the results show, the effectiveness of mindfulness-based cognitive therapy significantly in decreased levels of impulsivity adults with has attention deficit hyperactivity disorder (12), Despite the fact that study to the dedicated the effect of this therapy on reducing impulsivity-hyperactivity disorderattention deficit hyperactivity has not been explored, But in the earlier studies well as findings are similar to together suggest its efficacy in reducing the symptoms have been mentioned (13). While in previous studies to reduce the symptoms of attention deficit, hyperactivity and impulsivity were discussed together. Therefore results of this study can be considered consistent with earlier studies, The results suggest the effectiveness of mindfulness-based clinical interventions to reduce the symptoms of attention deficit hyperactivity disorder in childhood and in adulthood is particularly (14). From this perspective one can recognize that mindfulness-based cognitive therapy to patients with attention deficit hyperactivity learns, So instead they respond to the latest thrill to be impulsive, have more control over your answers, And the self well as in itself grounds for review possible solutions and their will be potential outcomes. Significantly more adults in the ADHD group had been previously evaluatedby a mental health professional compared to either the Clinical or Community control groups, perhaps implying that ADHD may be a more severe disorder that is more likely to lead to a mental health evaluation than are those disorders represented in the Clinical control group (3). Yet just one-third (34%) of our ADHD group had been previously diagnosed as having ADHD—a fact that serves to illustrate that ADHD in adults may not be widely recognized by mental health specialists working with adults (15). Nevertheless, this figure was significantly greater than the 16% found in our Clinical control group and in none of the Community controls. Yet nearly half of the adults in each of our clinical groups had received some other diagnosis than ADHD from a previously seen professional, with these two groups not differing in this respect. There was a significantmain effect for sex on the measure of prior ADHD diagnosis, such that males were more likely than females to have been previously diagnosed as ADHD across all groups (16). In application-level findings indicate the effectiveness of mindfulness-based cognitive therapy on patients impulsivity adults with attention deficit hyperactivity disorder, respectively.

As for prior treatment, we found that at least 80% of our two clinical groups had received some form of prior psychiatric or psychological treatment and that approximately half of each of these groups had been previous treated with psychiatricmedications; both groups certainly differed from the Community control group in these respects (17). The figures were significantly lower in the Community control group, where 40% had participated in some form of mental health treatment approach, while just 6% had taken a psychiatric medication. The figures were low for all groups in terms of prior hospitalization or residential treatment, although, as expected, the clinical groups were more likely than the Communitycontrol group to have experienced this form of treatment (18). Even so, the ADHDgroup was significantly more likely to have been previously treated in a residentialor halfway house facility than either the Clinical or Community control groups. There was a sex difference that proved significant here, but it did not interact with the grouping factor and so characterized all the groups. We found that males were more likely than females to have participated in residential treatment.

References

1. Knouse LE, Safren SA. Current status of cognitive behavioral therapy for adult attention-deficit hyperactivity disorder. Psychiatric Clinics of North America. 2010;33(3):497-509.
2. Semple RJ, Lee J, Rosa D, Miller LF. A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance social-emotional resiliency in children. Journal of Child and Family Studies. 2010;19(2):218-29.
3. Schoenberg PL, Hepark S, Kan CC, Barendregt HP, Buitelaar JK, Speckens AE. Effects of mindfulness-based cognitive therapy on neurophysiological correlates of performance monitoring in adult attention-deficit/hyperactivity disorder. Clinical Neurophysiology. 2014;125(7):1407-16.
4. Pliszka SR, McCRACKEN JT, Maas JW. Catecholamines in attention-deficit hyperactivity disorder: current perspectives. Journal of the American Academy of Child & Adolescent Psychiatry. 1996;35(3):264-72.
5. Mitchell JT, Robertson CD, Anastopolous AD, Nelson-Gray RO, Kollins SH. Emotion dysregulation and emotional impulsivity among adults with attention-deficit/hyperactivity disorder: results of a preliminary study. Journal of Psychopathology and Behavioral Assessment. 2012;34(4):510-9.
6. Abdolahzadeh Z, Mashhadi A, Tabibi Z. Effectiveness of mindfulness-based therapy on the rate of symptoms and mindfulness in adolescents with attention-deficit hyperactivity disorder. -اصول بهداشت روانیFundamentals of Mental Health. 2017;19.
7. Gharamaleki NS, Pourabdol S, Saravani R, Saravani S. The Effectiveness of Dialectical Behavior Therapy in Decreasing High Risk Behaviors Among Students Suffering From Attention Deficit/Hyperactivity Disorder. Zahedan Journal of Research in Medical Sciences. 2017;19(1).
8. Mongia M, Hechtman L. Attention-Deficit Hyperactivity Disorder Across the Lifespan: Review of Literature on Cognitive Behavior Therapy. Current Developmental Disorders Reports. 2016;3(1):7-14.
9. Cairncross M, Miller CJ. The Effectiveness of Mindfulness-Based Therapies for ADHD A Meta-Analytic Review. Journal of attention disorders. 2016:1087054715625301.
10. Chan E, Fogler JM, Hammerness PG. Treatment of attention-deficit/hyperactivity disorder in adolescents: A systematic review. Jama. 2016;315(18):1997-2008.
11. Bachmann K, Lam AP, Philipsen A. Mindfulness-based cognitive therapy and the adult ADHD brain: a neuropsychotherapeutic perspective. Frontiers in Psychiatry. 2016;7.
12. Janssen L, Kan CC, Carpentier PJ, Sizoo B, Hepark S, Grutters J, et al. Mindfulness based cognitive therapy versus treatment as usual in adults with attention deficit hyperactivity disorder (ADHD). BMC psychiatry. 2015;15(1):216.
13. Cole P, Weibel S, Nicastro R, Hasler R, Dayer A, Aubry J-M, et al. CBT/DBT skills training for adults with attention deficit hyperactivity disorder (ADHD). Psychiatria Danubina. 2016;28(Suppl. 1):103-7.
14. van de Weijer-Bergsma E, Langenberg G, Brandsma R, Oort FJ, Bögels SM. The effectiveness of a school-based mindfulness training as a program to prevent stress in elementary school children. Mindfulness. 2014;5(3):238-48.
15. Mitchell JT, Zylowska L, Kollins SH. Mindfulness meditation training for attention-deficit/hyperactivity disorder in adulthood: current empirical support, treatment overview, and future directions. Cognitive and behavioral practice. 2015;22(2):172-91.
16. Asherson P, Buitelaar J, Faraone SV, Rohde LA. Adult attention-deficit hyperactivity disorder: Key conceptual issues. The Lancet Psychiatry. 2016;3(6):568-78.
17. Mitchell JT, McIntyre EM, English JS, Dennis MF, Beckham JC, Kollins SH. A pilot trial of mindfulness meditation training for attention-deficit/hyperactivity disorder in adulthood: impact on core symptoms, executive functioning, and emotion dysregulation. Journal of attention disorders. 2013.
18. Bruner MR, Kuryluk AD, Whitton SW. Attention-deficit/hyperactivity disorder symptom levels and romantic relationship quality in college students. Journal of American College Health. 2015;63(2):98-108.