

Study the Effect of Mindfulness-Based Interventions on Anxiety for Cancer Patients

Seyyed Ali Ahmadi¹, Reza Zare², Fateme Ghorban Nezhad³

¹MA in Clinical Psychology, Birjand Islamic Azad University

²Specialized in Infection Diseases

³MS in Pure Math and Cancer Researcher

(¹ahmadi_seyedali@yahoo.com, ²seishokouh58@yahoo.com)

Abstract- Whether being informed by a doctor or finding out by an annual checkup; ‘*you are a cancer patient.*’ The result will be nothing but a comprehensive anxiety which affects the life in all aspects as throwing out of life, and a frustration that is just for a cancer patient. This paper presents how mindfulness - based interventions effect on cancer patients, and presents the psychological benefits to them.

Materials and Methods: This is a pre-test, post- test experimental paper included a control group. The paper was begun with mindfulness-based interventions and the mechanism of someone’s thought. The statistical universe contained all patients who came to Kashmar Modarres Hospital. The sample group consisted of 30 patients, selected according to paper goals. They were divided in an experimental, and in a control group (each group consisted of 15 patients).

Ketel's anxiety scale was done as a pre-test. No meaningful difference between two groups was reported. Then mindfulness-based training was done for experimental group, while the control group received no training. The mentioned test was redone.

Results: The co-variation analysis showed that observed difference between the averages of anxiety scores according to control experimental group were 99% meaningful.($P<001$).

Conclusion: All we found as the results were paralleled to similar researches: mindfulness-based interventions can reduce the level of anxiety for cancer patients.

Keywords: *Mindfulness, anxiety, Cancer*

I. INTRODUCTION

Mindfulness Bassed Interventions

The term *mindfulness* has been described by Bishop et al. (2004) as: “a no elaborative, nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is”. The first psychological intervention to incorporate training in mindfulness was Jon Kabat-Zinn’s *Mindfulness-*

Based Stress Reduction (MBSR) program which began in 1979 in Massachusetts, described in Full *Catastrophe Living*[1]. This program aims to train participants to approach their experiences with an attitude of mindfulness through formal meditation exercises, both in weekly classes and in daily home practice guided by audiotapes or CDs. Each meditation suggests a focal point for attention, such as the breath, sensations in the body, or sensory experiences such as sight or sound, any of which can help to anchor attention to the present moment. The original MBSR program was designed for patients with chronic pain or stress related physical disorders. More recently a *Mindfulness-Based Cognitive Therapy* (MBCT) program was developed for individuals with a history of recurrent depression [2]. MBCT is based on the MBSR program but incorporates more explicit cognitive elements and psycho-education alongside mindfulness teaching. The published empirical literature demonstrates that mindfulness-base interventions are continually being adapted and applied to a wide range of clinical groups (see Baer, 2003, for review), including cancer patients.

II. THE IMPORTANCE AND NECESSITY OF RESEARCH

In this century people are faced to a big problem called “*cancer*”; but the disease of next decade in Iran. Variety of researches show that in 15 years from now, the death number caused by cancer will be 3 times more than now, in other words 80000 cancer patients are adding every year.(daily death because of cancer is 105 persons)[3].

It’s believed that we know enough about the problem to take some action in order to find some ways to keep away it. With this in mind; we have to think of the cost of action and weight them against the risk of inaction.

The aim of this review is to describe and synthesize the evidence that mindfulness-based interventions offer psychological benefits for cancer patients. In order to fully meet this objective, the review sought to answer the following questions: 1. For whom is mindfulness helpful? 2. Does it matter how the mindfulness intervention is packaged? 3. What kinds of benefits can mindfulness offer to cancer patients?

III. MINDFULNESS AND CANCER PATIENTS

Researchers as Teasdale believed that there may be many dimensions underlying the effectiveness of mindfulness training and therefore advised formulation of how the different components match the processes maintaining a particular target problem. Cancer presents a complex set of physical, psychological and social challenges [4]. So a multi-faceted intervention might have the potential to confer multiple benefits through multiple routes.

Below is a description of four distinct mechanisms of which *metacognitive insight* is suggested as a primary mechanism from which *observing without judgment*, *experiential exposure* and *wise responding* are thought to develop [5].

Metacognitive insight: During mindfulness meditation, participants are encouraged to focus on their breath, and some particular parts of body.

By observing the inevitable journeying of the mind as thoughts come and go, concentrating on present moment. Shapiro et al. (2006) suggested that this "perceiving" experience might be a meta-mechanism that facilitates change in other process variables, such as symptom reduction or increased psychological wellbeing.

No judgment: while doing mindfulness meditation, the participants are encouraged to allow whatever comes to awareness without evaluating as, for example, useful, harmful, fatal, good, or important. For instance if the breath is the focus of attention, the aim is to simply direct attention and awareness to the breath without judging whether or not this is a good way to be breathing, or whether a different way of breathing would be better.

Focusing attention on the present moment, with a gentle curiosity and non-judgmental acceptance of all aspects of experience, is thought to interrupt brooding on past events and worry about the future, and is incompatible with maladaptive avoidance behaviors. There are a number of reasons why such an approach might be helpful to someone undergoing cancer. For example, strong physical sensations such as pain might be less overwhelming if, instead of trying to analyze the meaning of the pain, or worrying about how long it can be tolerated, it is experienced directly as sensations that change from moment to moment [6].

Wise responding: Metacognitive insight, in which emotional states are experienced as transient phenomena, can bring about greater freedom to choose wise action in response to difficult situations, rather than reacting automatically without conscious intention [7]. Physical sensations might be seen as messages that something is not right, so the more we pay attention to what is happening in our bodies, the more opportunity we have to notice what nourishes the body and what does it harm, and to take action when the body indicates a need. For instance, when dealing with cancer treatments and their physical consequences, there might be temporary or longer-term changes to lifestyle that can help with recovery, such as rest, healthy eating, or gentle exercise. In the social realm, many cancer patients face the challenge of dealing with

the reactions of loved ones. Learning to be more aware of emotions and resisting the automatic reactions they invite can introduce greater freedom to choose responses with preferable results interventions that aim to engender greater mindfulness incorporate regular experiential practice of mindfulness meditation exercises during classes and at home, alongside a psycho-education element that is usually tailored to the client group. Mindfulness-based interventions have been shown to have benefits for a number of clinical populations [8], including those suffering with anxiety [9], depression, chronic pain, and cancer patients [10].

Although mindfulness-based interventions are usually offered in a group setting, Bauer-Wu et al. (2008) adapted Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction (MBSR) Program for delivery to hospitalized SCT patients in an individualized format. The intervention involved one-to-one sessions with an instructor once or twice weekly and a 17-minute guided practice CD which participants were encouraged to listen to daily. The first session with the instructor happened before admission to hospital and the intervention continued throughout hospitalization. Mindfulness shows new dimensions of relation between mind and body, so psychological and medical researches has been increasingly improved.

IV. RESEARCH METHODOLOGY

This is a practical experimental like research with pre-test, post-test accompany with a control group. Statistical universe in this paper is all cancer patients who came to Kashmar Modares Hospital. The sample group contains 30 cancer patients, have been chosen randomly. The 19 females were from 23 to 53 and 11 males from 27 to 68. patients were divided in two equal groups, according to odd and even numbers. The society was given Ketel's anxiety scale; the result was analyzed by SPSS software.

V. FINDINGS

In terms of analysis it was done in descriptive analysis and inferential analysis. In descriptive analysis factors as mean, standard deviation and presentation and in inferential analysis co-variation were used. A comparison between Experimental post-test anxiety mean score and control group shows a remarkable decreasing in experimental post-test depression score.

TABLE I. PRE-TEST AND POST-TEST MEAN AND DEVIATION FOR EXPERIMENTAL AND CONTROL GROUP

post-test		Pre-test			Test groups	
Standard deviation	mean	Standard deviation	mean	Patients		
4/88	26/00	21/25	40/06	15	experimental	Anxiety
4/32	38/53	17/58	39/33	15	control	

In second table ANCOVA results contain of sum of squares (SS), means of squares (MS), digress of freedom (DF), levels of signification (P), and eta squares (N) were used to show the effectiveness of Mindfulness in decreasing the signs of anxiety for cancer patients.

TABLE II. A BRIEF OF ANCOVA FOR SHOWING MINDFULNESS-BASED INTERVENTIONS ON ANXIOUS FOR CANCER PATIENTS

Changing source	N	p	f	ms	df	ss
Pre-test anxiety scores	0/32	0/001	13/15	195/17	1	195/17
training	0/75	0/000	82/21	1219/66	1	1219/66

ANCOVA shows that mindfulness trainings has effected on post-test anxiety scores. In other words, the differences between participants' anxiety mean scores for the control group and the other group in post-test is 99% meaningful. ($p < 0/01$). The effectiveness of the interventions was 0/75.

VI. DISCUSION

Before starting this research, the researcher studied some of the body of literature on mindfulness-based interventions for cancer patients is the lack of well controlled studies with rigorous methodologies. Only eight studies had controlled pilot studies. Although the uncontrolled experience are inexpensive, but there is a danger in publishing so many studies without being sure of the results. Equally concerning is the strength of conclusions that some authors made when interpreting their findings from uncontrolled studies [11]. Kabat-Zinn (1990) states that MBSR was designed to help participants "move toward greater levels of health and wellbeing". Consistent with this aim, a number of studies have found significant improvements in quality of life following mindfulness-based interventions.

On other positive outcome measures, Garland et al. (2007) found that MBSR was associated with an increasing in spirituality and post-traumatic growth, whereas Lengacher et al.'s (2009) RCT found no impact on spirituality or optimism, and Kieviet-Stijnen et al. (2008) reported an increase in *joy in life* following MBSR in their uncontrolled study.

This issue is related to a lack of clear rationale for why mindfulness-based interventions might be expected to be of benefit to cancer patients no studies offered a true long-term picture of the continuing effects of mindfulness-based interventions: amongst studies that made longitudinal at follow-up. Keeping a control group waiting for an intervention is clearly an ethical issue, but one which must be weighed against the ethical issue of involving patients in research that is not sufficiently rigorous to answer important questions about the lasting effectiveness of the intervention. The validity of measuring mindfulness through self-report questionnaires has been questioned [12], partly because of the complexity and ambiguity of the mindfulness construct itself. For example, Grossman argues that since different mindfulness scales are

often poorly correlated with each other, they perhaps measure different constructs. Furthermore, Grossman cites evidence that respondents inexperienced in mindfulness meditation practice have a different understanding of scale items from those with mindfulness experience. This is why few researchers included measures of mindfulness in their studies of effectiveness, and why those that did presented a mixed picture [11].

VII. STRENGTH AND LIMITATION

The conclusions on outcomes broadly tally with those made by Ledesma and Kumano (2009) [13], in their meta-analytic review of mindfulness-based interventions. However, strength of the narrative approach adopted in the current review is that it afforded greater opportunity to examine more complex issues regarding participant and intervention variables, as well as to make more subtle distinctions between different outcome measures. This synthesis therefore provides greater scope for deriving implications for clinicians, purchasers and researchers. By structuring the synthesis in terms of the kinds of questions that might be important to clinicians, the review focused primarily on the priorities for clinical practice rather than intellectual understanding for its own sake.

VIII. CONCLUSION

There is reasonably good evidence that mindfulness-based interventions can lead to improvements in anxiety as well as more broadly-defined constructs of distress or stress symptoms. More mixed results have been found for a measure of transient mood states. Amongst positive outcome measures, there is reasonably good evidence that mindfulness -based interventions can lead to improved quality of life, but on other measures of positive psychological wellbeing the evidence is inconclusive. There is not yet sufficient evidence to determine whether or not mindfulness-based interventions can have a positive impact on physical symptoms such as sleep or pain for cancer patients. With respect to process variables, one promising finding supports rumination as a mediator, but overall it is not clear how mindfulness based interventions are producing their effects on outcomes, since even measures of mindfulness did not consistently change post-intervention. Qualitative studies identified some themes that are consistent with the theoretical mechanisms by which mindfulness-based interventions are intended to offer psychological benefits to cancer patients.

IX. REFERENCES

- [1] Kabat-Zinn, J. (1990). Full Catastrophe Living: How to Cope with Stress, Pain and Illness Using Mindfulness Meditation. New York: Delacorte
- [2] Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse. New York: Guilford Press.
- [3] Eilkhani, M., Waysto to protect a cancer patient, Tehran: Ghazi Jahani publ. 2000.
- [4] Brennan, J. (2004). Cancer in context. Oxford: Oxford University Press.

- [5] Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373-386.
- [6] Luckman, J. & Sorensen, K.C. Core principals & practice of medical surgical nursing, 1996:14th edition, Philadelphia, W. B. Saunder co.
- [7] Carmody, J., & Baer, R. A. (2009). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Med*
- [8] Grossman, P. (2008). On measuring mindfulness in psychosomatic and psychological research. *Journal of Psychosomatic Research*, 64(4), 405-408. *icine*, 31(1), 23-33.
- [9] Kabat-Zinn, J. (1992). *Full Catastrophe Living: How to Cope with Stress, Pain and Illness Using Mindfulness Meditation*. New York: Delacorte.
- [10] Foley, E., Baillie, A., Huxter, M., Price, M., Sinclair, E. (2010). Mindfulness-based cognitive therapy for individuals whose lives have been affected by cancer: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 78(1).
- [11] Coyne, J. C., Lepore, S. J., & Palmer, S. C. (2006). Efficacy of psychosocial interventions in cancer care: Evidence is weaker than it first looks. *Annals of Behavioral Medicine*, 32(2).
- [12] Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27-45.
- [13] Ledesma, D., & Kumano, H. (2009). Mindfulness-based stress reduction and cancer: a metaanalysis. *Psycho-Oncology*, 18(6), 571-579.