Mindfulness Based Stress Reduction (MBSR) Program: An Overview

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You cannot control what happens to you, but you can control your attitude toward what happens to you. —Brian Tracy

In Modern everyday life, human beings are constantly dealing with various stresses. It may be because of hectic lifestyle and intense work pressure, under which we live today. In addition, personal ambitions, social pressure, and individual orientation to sedentary mental work, with many other possible reasons, make everyone go through persistent stresses. Although the acuity of the stress response and its behavioral manifestations have been shown to vary greatly between individuals (Tyrka et al. 2006), it becomes a potential problem when it is persists or is intense. It threatens the homeostasis, which in turn is balanced through physical and psychological mechanism. Constantly stressful situation may disrupt the balance of health and the body’s ability to maintain wellness and lead to poor health. It is generally accepted that debilitating stress affects mental and physical well-being detrimentally (Evans, Huckelebridge, Clow, 2000). Because of its epidemiological transition stress is getting widespread attention in the scientific literature, as potential risk factors for many diseases. An enlarging body of evidence suggests that stress is an underlying risk factor for many health conditions (Mooy, Vries, Grootenhuis et al., 2000), including physical as well as mental illnesses (Koenen, Lyons, Goldberg, et al., 2003).

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There is now mounting evidence that Psychological Risk Factors are associated with not only with incidence (Ferketich, et al., 2000) but also with progression (Lett et al., 2004) of medical condition. In short, psychological factors and medical conditions have a reciprocal relationship. This interplay is even more intimate and intricate in cases of chronic medical illnesses, where emergence of illnesses leads to disturbances in mental health. Human beings are complex systems and illness can be caused by a multitude of factors and a complex interaction between these factors. Therefore, it is difficult to ignore psychological interventions for people who suffer from psychological disorders, medical condition, or both.

Furthermore, understanding both individual mental and physical responses to distress or illness is critical to developing and planning for interventions across the biological, psychological, spiritual and sociocultural levels. Evidence-based interventions at multiple levels strengthen clinical care and facilitate resilience and recovery. So, Health Professionals attempt to move away from a simple linear model of health and looks at the combination of factors involved in illness such as biological, psychological and social. Through the years, traditional psychology has focused on ways to help in making ill people better by findings clinically valid and empirically supported methods to help fix things that are wrong with them (Kauffmam, 2006). While there is no magic formula that will work in all situations, one of the proved way to relieve distress or suffering is cognitive behavior therapy (CBT) and other is Mindful Meditation. Although both approaches aim at relieving distress but there are some basic differences between the notions of these approaches, these are as follows: In CBT, emphasis is placed on positive, negative, or faulty thoughts and focuses more on changing the content of thoughts (Segal, Teasdale, Williams, 2004) whereas in mindfulness based interventions, the emphasis is on identifying thoughts as just “thoughts,” whether they are positive or negative. Unlike standard CBT, in mindfulness-based interventions the main goal is not to change the content of the patient’s system of cognitions but rather to change his or her way of relating to it. During mindfulness training, patients are helped to shift from a focus on the past and/or
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the future (conditioned by memories and rumination) to a focus on the present moment, developing a process of de-centering and dis-identification from personal experience (Segal, Williams, Teasdale, 2002).

In CBT, therapists encourages their patients to adopt the empirical problem solving approach of scientists, and the therapist serves as a role model for their patients by instilling self-efficacy, enthusiasm and hopefulness about the challenging work of changing maladaptive cognitions (Knapp & Beck, 2008) by systematic desensitization through the induction of symptoms/thoughts during the intervention. On contrary, mindfulness interventions focus on the meditation practice itself; rather than on specific symptoms. Although not intentionally evoked, when a stressful sensation or thought arises, either during formal meditation or in the course of daily routine, patients are encouraged to see it as opportunities to engage in mindful coping strategies, to observe the thoughts, emotions and sensations as they arise and disappear, and to act instead of reacting according to habitual and thoroughly ingrained cognitive and behavioral patterns. So, Mindful meditation makes the patient aware about the effects of mindless constant activity (‘automatic pilot’) on their body, emotions, thoughts, and how they react to events.

In addition it teaches people to observe negative thoughts without changing their content, thus, relating towards them in a new way. Through engaging in this approach, clients begin to disengage from dysfunctional cognitive routines that often serve as a gateway to relapsing back into depression and other problems (Segal, Teasdale, Williams, 2004). From the above mentioned comparison it is clear that Mindful meditation is rooted in the core notion that all psychological sufferings result from judgment whereby experiences are divided into good and bad, which should be either strived for or avoided, inevitably leading to some level of frustration, distress, anxiety, and depression (Nyklíèek & Kuijpers, 2008). Although “Mindfulness” is deceptively simple, yet it is a powerful form of meditation training and this approach has been used successfully with different clinical population.
MINDFULNESS AND ITS ROOTS

The word “Mindfulness” is an English translation of Vipassana, which is a combination of two words Vi (in a special way) and Passanna (to see, to observe) which implies observing in a special way. Mindfulness is a form of self-awareness training adapted from Buddhist mindfulness meditation. It refers to non-judgmental awareness of moment-to-moment experience. Through mindfulness practice, a person intentionally pays full attention to whatever is occurring in the present moment without judging it. In addition to Vipassana, Mindfulness meditation, also known as insight meditation, is not new but is an age-old form of meditation practices that derives from Theravada Buddhism (Gunaratana, 2002). It has been prevalent in India since ancient times as it was discovered by Gautama, the Buddha, more than 2,500 years ago at the time of His Supreme Enlightenment at Bodh Gaya (Ahir, 1999).

Historically, mindfulness has been called “the heart” of Buddhist meditation (Thera, 1962), which the Buddha taught to his followers. Among his earliest teachings, he detailed the meditation instructions for mindfulness practice: the Anapanasati Sutra (Rosenberg, 1998) and the Satipatthana Sutra (Smith, 1999). The approach is rooted in the core Buddhist notion that all psychological sufferings are the result of the judgmental mind, dividing experiences into good and bad, which should be either strived for or avoided, inevitably leading to some level of frustration, distress, anxiety, and depression (Nyklíèek & Kuijpers, 2008). Mindfulness is a skill, and like learning a musical instrument, is developed through repeated daily practice. An intended result of mindfulness practice is the development of a mental orientation of mindfulness toward daily events providing enhanced mental/emotional flexibility and clarity to deepening one’s enjoyment of life and making one more skillful in facing life’s challenges (Davis, Fleming, Bonus, Baker, 2007).

By incorporating the basic factors of mindfulness i.e. non-reactivity, observing, awareness and non-judging (Bear, Smith, Hopkins et al., 2006), one’s inner world can begin to change regardless of the external circumstances (Fries, 2009). An intended
result of mindfulness practice is that a mental orientation of mindfulness will develop toward daily events providing enhanced mental/emotional flexibility and clarity to deepening one’s enjoyment of life and making one more adept in facing life’s challenges (Davis, Fleming, Bonus, Baker, 2007). Mindfulness practice cultivates concentration, insight as well as physiologic relaxation. Therefore, mindfulness training may allow for reductions in stress even when changes in the organizational environment are impossible or are not practical (Hayes et al, 2006). Mindfulness based interventions have substantiated its efficacy in helping patients with different kind of physical and psychiatric problems.

Over the years, mindfulness has been accepted and successfully incorporated into many therapeutic interventions in both the medical and psychological fields. Grossman, Niemann, Schmidt, and Walach, (2004) cited the assumptions underlying this concept and approach as follows:

(1) Humans are ordinarily largely unaware of their moment-to-moment experience, often operating in an “automatic pilot” mode.

(2) They are capable of developing the ability to sustain attention to mental content.

(3) Development of this ability is gradual, progressive and requires regular practice.

(4) Moment-to moment awareness of experience will provide a richer and more vital sense of life, inasmuch as experience becomes more vivid and active mindful participation replaces unconscious reactivity.

(5) Such persistent, non-evaluative observation of mental content will gradually give rise to greater veridicality of perceptions.

(6) As more accurate perception of one’s own mental responses to external and internal stimuli is achieved, additional information is gathered that will enhance effective action in the world, and lead to a greater sense of control.
In addition, Fries (2009) wrote three critical principles or beliefs that act as a foundation for the development of mindfulness and psychological well-being. (1) One must come to the realization that “life is not fair”. (2) One must face reality and deal with the truth, as it presents itself, in any situation. (3) One is always free to choose one’s attitude no matter what the situation is. Mindfulness meditation elicits more positive emotions, (Siegel, 2007), and optimism has been found positively correlated with physical health, effective coping strategies, successful recovery from diseases, and longevity (Scheier & Carver, 1985, 2001). Alidina (2010) has mentioned ten ways in which mindfulness helps: (1) Training the Brain (2) Improving Relationships (3) Boosting Creativity (4) Reducing Depression (5) Reducing Chronic Pain (6) Giving Deeper Meaning to Life (7) Reducing Stress (8) Combating Anxiety (9) Regulating Eating Habits (10) Increasing Your Happiness. A number of different mindfulness-based training programs including Mindfulness-Based Cognitive Therapy (MBCT), Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Mindfulness-Based Eating Awareness Training (MB-EAT) can effectively treat different health conditions. In addition, one of the effective and widespread approaches where mindfulness is a key component is called Mindfulness-Based Stress Reduction (MBSR).

**MINDFULNESS BASED STRESS REDUCTION**

**What is Mindfulness Based Stress Reduction (MBSR)?**

Mindfulness-based stress reduction (formerly known as the stress reduction and relaxation program) is a standardized meditation program developed by Jon Kabat-Zinn in 1979, by integrating Buddhist mindfulness meditation with contemporary clinical and psychological practice (Kabat-Zinn, 1990; Kabat-Zinn, 2003). It was originally developed to relieve suffering among patient with chronic pain and to facilitate adaptation to medical illness and provides systematic training in mindfulness meditation as a self-regulation approach to stress reduction and emotion management (Kabat-Zinn,
1982). Presently, MBSR as an intensive structured training in mindfulness meditation has proved its efficacy in different population in different parts of the world. It is important to remember that although MBSR has been borrowed from the instructions of Buddhist tradition, it does not seek to be “Buddhist” or to convert anyone to that tradition, therefore this program should be viewed as non-religious and non-esoteric. It is firmly rooted in principles of mind–body medicine, and offers itself to anyone who wishes to learn to enhance his or her own health (Kabat-Zinn, 1990). Kabat-Zinn, (2003a) described the two basic intentions behind the founding of MBSR i.e. (1) the program was intended to become an effective vehicle for relief of suffering, (2) MBSR was developed as a model approach that could be adapted in a variety of health care concerns in hospital and centers.

Interest in MBSR has grown exponentially since its introduction and it has gradually gained recognition as an important means of teaching people how to live their lives fully even if they are patients with chronic illness (Speca, Carlson, Goodey, Angen, 2000). Although, MBSR intervention is usually directed towards people with chronic physical and mental illnesses, but the aim of the intervention is not to replace medical treatment but to be used as a vital complement to it (Kabat-Zinn, 1990), to improve patients’ quality of life and to reduce psychological distress, which in theory would ultimately improve clinical outcomes. In addition, it has been tried out on various nonclinical populations such as students, therapists, prison inmates and impoverished inner city dwellers (Grossman, Niemann, Schmidt, Walach, 2004). Recent years have witnessed an increasing trend to use MBSR program in different settings. There is no doubt in the fact that more and more people are relying on MBSR as till 1998 an estimated 240 MBSR programs were established in North America and Europe. In a nutshell, it seems that this is the time when MBSR is considered to be an asset and new programs are being established each year (Kabat-Zinn, 1998).

In the past few decades, rigorous scientific studies have demonstrated that meditation have a positive influence on individual’s
health, both mental and physical. The health promotion effects of MBSR appear to complement conventional biomedical treatment in a comprehensive, patient-centered approach for the healing and the alleviation of human suffering (Reibel, Greeson, Brainard, & Rosenzweig, 2001). MBSR, a popular form of mindfulness-based intervention, is now widely used with a range of mental health problems and can be adapted to various age groups including adult population as well as with children (Wall, 2005). The empirical basis of MBSR has been demonstrated through a number of studies that have resulted in a growing conviction amongst clinicians that MBSR is efficacious in diverse samples of patients and general population regarding a variety of psychological states, including reduction in mood disturbances (Brown, Ryan, 2003), general distress (Speca, Carlson, Goodey, Angen, 2000) worry, rumination, and anxiety (Jain, Shapiro, Swanick, et al., 2007), pain (Kabat-Zinn, 1982), and improves sleep quality (Carlson, Garland, 2005), sense of well-being (Beddoe, Murphy, 2004) quality of life (Roth, Robbins, 2004).

Mindfulness-Based Stress Reduction (MBSR) has gradually gained recognition as an important means of teaching people how to live their lives fully even when suffering from chronic illness (Speca, Carlson, Goodey, Angen, 2000). The core of MBSR involves training in mindfulness meditation, a practice of self-regulating attention that lowers reactivity to stress triggers (Kabat-Zinn, 1990). Mindful meditation also decreases physical symptoms of distress by balancing sympathetic and parasympathetic responses (Kabat-Zinn, 2003b). Regular practice of mindfulness leads one to taking care of health and emotional needs that ultimately lead to positive emotions and happiness. The fact is that the meditator can take better care of one-self (physically and emotionally) and choose to feel calm even when things are not wonderful. Regular mindful practice decreases the risk of developing distress that leads a person to take responsibility of his health and he begins to have a yearning to lead a healthy lifestyle and increases the chances of survival. In addition, the MBSR program emphasizes the importance of bringing mindfulness to everyday life. It invites attention to routine activities
such as brushing one’s teeth, feeding the cat, and taking out the garbage; to walk mindfully when walking; to use sensations in one’s body as a way to stay aware and present in each moment; and to support mindfulness of any experience by “breathing with” it (Williams, Teasdale, Segal, & Kabat-Zinn, 2007). In short it can be said that the MBSR model, with its focus on physical as well as psychological conditions, offers an expanded dimension to the role of meditation practices in clinical as well as everyday settings.

Basic Principles and Components of MBSR

MBSR has proved to be enormously empowering for patients with chronic diseases and debilitating conditions, as well as for psychological problems such as anxiety and panic (Williams, Teasdale, Segal, & Kabat-Zinn, 2007). Cohen-Katz et al, (2005) have described the procedure of MBSR program briefly in following lines “The MBSR is taught as an 8-week program that meets approximately 2.5 hours a week and includes a 6-hour daylong retreat between the 6th and 7th weeks. Participants are asked to practice the mindfulness techniques 6 days a week as “homework” and given audiotapes to facilitate this. Group sessions include a combination of formal didactic instruction on topics such as communication skills, stress reactivity, and self-compassion and experiential exercises to help participants integrate these concepts.

The program is described in detail in Kabat-Zinn’s textbook “Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness.” (Cohen-Katz et al, 2005). Participants commit themselves to spend at least 45 minutes daily, six days a week, conducting MBSR exercises during the training period. MBSR is a structured group program though there are examples where it was administered in individual settings (Weiss, Nordlie, Siegel, 2005; Nehra, Sharma et al., 2012). MBSR utilizes stress-reduction skills including sitting meditation, hatha yoga, and a somatically focused technique called the body scan (Kabat-Zinn, 1982). Kabat-Zinn explains that the purpose of the 8-week program is to teach participants how to ‘pay attention in a particular way: on purpose, in the present moment, and non-judgmentally’. By learning
to cultivate present-moment awareness, practitioners are described as becoming more mindful of their thoughts, emotions, sensations and overall sense of self. The approach assumes that greater awareness will provide more veridical perception, reduce negative affect and improve vitality and coping (Grossman, Niemann, Schmidt, Walach, 2004).

The MBSR program recommends using meditation, yoga, relaxation training as well as strategies to incorporate these practices into everyday life. A range of other mindfulness meditation techniques are taught: awareness of breathing, mindful walking, mindful eating, and mindful communication. In all of these practices, the participant is trained to pay full attention to present-moment experience, choosing to respond skillfully rather than react automatically to external events, thoughts, emotions, or sensations as they arise.

1 Body scan: MBSR’s most innovative technique is the body scan, which teaches patients to “re-establish contact with the body” through a “thorough and minute focus on the body” in a guided meditation in which patients lie supine and are verbally taken on a tour of the body, focusing awareness sequentially on individual parts of the body. Patients become aware of where pain and stress are carried, where pain is centered—and where it doesn’t exist at all—as well as gaining a sense of how the body changes over time between scans (Kabat-Zinn, 1990). Body-Scan Meditation is the first formal mindfulness practice that patients engage in for a sustained period of time. It involves lying on your back and moving your mind through the different regions of your body. Transformation and change occur by learning to be open and accepting whatever is present—good, bad, or neutral; to be intentional in the way one pays attention; to skillfully relate to difficulties, distractions, and the wanderings of the mind, and to be more compassionate and befriending of whatever arises (Nehra, Nehra, Dogra, 2012).
2 **Sitting meditation:** Sitting meditation is called the heart of the formal meditation practice. Usually practice of the sitting meditation is done either on a chair or on the floor. In this technique, participants are instructed to sit in a relaxed, upright posture and to direct their full attention to the sensations of breathing. They are instructed to return their attention to the breath whenever it wanders (Jha, Krompinger, Baime, 2007). Further, participants are encouraged to observe their thoughts and emotions but to let them pass without judging them or becoming immersed in them (Praissman, 2008). This allows both positive and negative thoughts and emotions to pass quickly and can cultivate a greater awareness of the ways thoughts, feelings, and behaviors that affect emotional, mental, and physical health. This may also help reduce distractive or ruminative thoughts and assist practitioners in better noticing, understanding, and integrating their own perception of self and the environment (Jain, Shapiro, Swanick et al., 2007). After a period of systematic practice, participants begin to observe the impermanence of all thoughts. People start to notice that they can witness their own thoughts objectively without having to act on them. This is particularly helpful in working with impulse control when a craving arises. It is also possible to realize that the part observing is not in pain, confused, or damaged. This silent witnessing allows participants to see unanticipated possibilities in managing adversity. Transformation and change occur by learning to anchor awareness in the present moment and to live life in a curious interested way, instead of the usual “I like” or “I don’t like” mode.

3. **Mindful Hatha Yoga:** Mindful hatha Yoga is the third major formal meditation technique along with body scan and sitting meditation. These exercises are the central part of the MBSR intervention. Gentle, often modified yoga stretches are practiced for approximately 30 minutes in each 90-minute session, with a focus on body awareness.
The Hatha Yoga exercises are performed in a slow and mindful manner, keeping the mind focused on the parts of the body that are engaged in a particular exercise, and allowing the muscles that are not engaged to rest and relax (Vallejo & Amaro, 2009). The aim of the exercise is to notice the changing sensations, not necessarily to do the exercise perfectly. This attentive movement allows a discovery of the body’s ability to gradually surpass initial limits of stamina and flexibility (Vallejo & Amaro, 2009). It makes the body feel good; improves balance, flexibility of the joints and muscles; and relaxes stiff, tight muscles. Yoga also relieves stress, makes one more “mindful” and aware, helps improve concentration, and helps one feel more tranquil and calm.

In addition to the above mentioned formal techniques, there are some informal techniques (Mindful Walking; Mindful Eating etc.) that are also taught to the participants. The purpose is to make the participants to learn mindfulness skills that they will then put into practice in everyday life. So it can be said that MBSR is based on self-awareness notion and skills that are brought about by breath concentration in order to recover all living activities (Jam, Imani, Foroughi, Alinaghi, Koochak, Mohraz, 2010), which have demonstrated its applications to daily life (Biegel, Brown, Shapiro, Schubert, 2009). Together, this package of mindfulness practices (formal and informal) aims to enhance the ability to observe the immediate content of experience, specifically, the transient nature of thoughts, emotion, memories, mental images, and physical sensation (Goldin & Gross, 2010).

**Essential Pillars of MBSR**

MBSR is a standardized meditation program but simply following the set of instructions mechanically is not enough to cultivate the healing power of mindfulness. The attitude with which one undertakes the mindfulness practice is important (Nehra, Nehra, Dogra, 2012); Kabat-Zinn (1990) advocates seven attitudinal foundations of mindfulness practice that are considered as pillars of mindfulness.
1 Non-Judging: Almost everything one sees is labeled and categorized by the mind as “good”/“bad”/“neutral”. The habit of mental categorization and judgment posits acts to restrain individuals’ growth via mechanical thoughts and behavior that suspend the process of learning. Non-judging means to be an impartial witness to one’s own experience and, in the process, to notice the never-ending stream of evaluating and reacting to experiences that one engages in (Knowles, 2008). During meditation, people become aware of the fact that they are continuously immersed in an uninterrupted flow of thoughts that come regardless of their will to have them or not, one after the other, in very rapid succession. Through mindfulness practice, a person intentionally pays full attention to whatever is occurring in the present moment without judging it. This means not making a positive or negative evaluation of what is happening, just simply observing it, all that is needed is to watch what is happening...including how one habitually judges & reacts to his/her own experience. It requires that one becomes aware of the stream of judging and reacting to inner and outer experiences and step back from it.

2 Patience: One of mind’s favorite activities is to wander into the past and into the future and lose itself in thinking. Patience is the knowledge that things unfold in their own time. Practicing mindfulness gives one the chance to give time and space to one’s own unfolding. From this peace, one becomes more able to re-evaluate one’s relationship with the disturbance.

3 Beginner’s Mind: Too often one lets one’s thinking and beliefs about what he/she “knows” prevent him/her from seeing things as they really are. Practicing mindfulness means to take the chance to see everything as if it was for the first time and not allow one’s illusion of knowing prevent one from being present to one’s experiences. Because no moment is the same as any other moment, beginner’s mind helps one to stay alert to the unique possibilities that each moment presents.
4 **Trust:** Anybody who is imitating somebody else, no matter who it is, is heading in the wrong direction. Having trust in yourself, your intuition, and your abilities is the hallmarks of mindfulness practice. Trust means that one learns how to honor his/her own feelings rather than to distrust or suppress them. With this attitude, comes the knowledge of practicing progress toward one’s desired goals, as opposed to rigidity or perfection.

5 **Non-Striving:** “Almost everything one does, is done for a purpose, to get something or somewhere.” Actually this attitude can be a real obstacle in meditation. Although meditation takes a lot of work and energy, ultimately it is about non-doing. Mindfulness practice is a chance to try a profoundly different approach. It has no goal other than meditation itself. Non-Striving is the state of not doing anything, just simply accepting that things are happening in the moment just as they are supposed to.

6 **Acceptance:** In the course of our daily lives we often waste a lot of energy denying and resisting what is already a fact. This actually prevents positive change from occurring. Acceptance means completely accepting the thoughts, feelings, sensations, and beliefs that you have, and understanding that they are simply those things only. Acceptance is not a passive response to the conditions you encounter but a willingness to see things as they actually are, in that moment, not as you wish or expect them to be. Acceptance does not imply that you like the way things are. In Mindfulness practice acceptance is cultivated by taking each moment and each aspect of our experience just as they come, focusing on the present and being receptive to the flow of all that comes to us and passes on. Doing that uses up one’s energy in the struggle instead of using it for healing and change.

7 **Letting Go:** When we pay attention to our inner experience, we discover that there are certain thoughts, feelings and situations that the mind seems to want to hold
on to. In mindfulness practice we just keep on acknowledging whatever arises, then letting it pass on when it will, making space for the next moment and the next experience. Letting go occurs when you neither try to hold on to nor to reject your experience. Let a thought or feeling come in and pass without connecting it to anything, observing them exactly as they are and allowing them to come and go. Alidina (2010) also has cited Kindness and curiosity as another vital attitudinal foundation of mindfulness.

8 **Kindness:** Kindness is one of the most important of all attitudes one can bring to mindfulness practice. Mindfulness teaches and utilizes non-judgmental observing of the arising and emergence of thoughts and feelings and also focuses on (re)directing attention, with a focus on trying to generate feelings of warmth, gentleness and kindness (Gilbert, 2000; Gilbert & Irons, 2005). Kindness involves understanding one’s difficulties and being kind and warm in the face of failure or setbacks rather than harshly judgmental and self-critical (Gilbert & Tirch, 2009). By bringing a sense of friendliness or kindness to experience, the experience, whether it’s pleasant, unpleasant or neutral, transforms (Alidina, 2010).

9 **Curiosity:** Curiosity is the basis of all true learning (Alidina, 2010). Segal et al. (2002) note that “. . .in mindfulness practice, the focus of a person’s attention is opened to admit whatever enters experience, while at the same time, a stance of kindly curiosity allows the person to investigate whatever appears, without falling prey to automatic judgments or reactivity”. Applying curiosity to oneself requires courage, because seeing the world as it is means not seeing the world as one would like it to be. This tolerance of internal or external stimuli is described in many eastern languages as a general curiosity or openness, an “affectionate, compassionate quality within the attending, a sense of openhearted, friendly presence and
interest” (Kabat-Zinn, 2003). In this way a curious person is fully connected with one’s senses (Alidina, 2010) and to be connected with senses (present moments) are the basis of cultivating mindfulness.

**Mindfulness Skills as Mechanisms of Change**

Mindfulness has its modern origins in the late 1970’s with the work of Jon Kabat-Zinn, who introduced MBSR to the psychological field. By the late 1990s, over 240 hospitals in the United States and Europe offered MBSR programs (Salmon, Santorelli, & Kabat-Zinn, 1998). Such a great emergence of MBSR within a comparative short span of time is very promising. Despite great interest in the application of MBSR in mentally and physically ill patients, less attention has focused on the actual mechanism underlying the helpfulness of MBSR. However, in an attempt to understand how mindfulness meditation might be therapeutic; several explanations have been proposed to explain the processes by which mindfulness-based interventions leads positive physical, psychological, and emotional effects. Some of the possible mechanisms which are proposed in world literature are metacognitive awareness (Teasdale, Moore et al. 2002), decentering (Fresco, Segal et al. 2007), re-perceiving (Shapiro, Carlson et al. 2006), and decreased rumination (Deyo et al. 2009).

More recently Garland et al. (2009) have proposed “mindful coping model” that depicted how mindfulness creates positive result. The model suggests that to re-construe an appraisal of a given event as positive, one must first disengage and withdraw from the initial, negative appraisal into a transitory metacognitive state that attenuates semantic evaluations associated with the event (Garland, Gaylord, Fredrickson, 2011). In addition, Baer in 2003 and Ludwig & Kabat-Zinn in 2008 did superb reviews of the literature on the use of mindfulness as a clinical intervention and a description of the applications of mindfulness to mental health problems that is as follows:

Baer (2003) has reviewed several mechanisms that may explain how mindfulness skills can lead to stress reduction, behavior and cognitive change.
1 Exposure: Through mindfulness practice, a person intentionally pays full attention to whatever is occurring in the present moment without judging it. So, MBSR teaches patients to change their relationship with thoughts and feelings by developing an objective, compassionate, and inquisitive approach to thoughts and feelings. This shift in perspective can lead to enhancement of self-regulation, cognitive and emotional flexibility, and decreased experiential avoidance (Ong, Shapiro, Manber, 2008). Kabat-Zinn, et al. (1992) describes mechanism for the potential effects of mindfulness training on anxiety and panic. Sustained, nonjudgmental observation of anxiety-related sensations, without attempts to escape or avoid them, may lead to re-educations in the emotional reactivity typically elicited by anxiety symptoms. Participants are instructed to observe these sensations non-judgmentally when they naturally arise. Thus, the practice of mindfulness skills may improve patients’ ability to tolerate negative emotional states and to cope with them effectively.

2 Cognitive Change: Mindfulness actually may lead to changes in thought patterns and the attitude of one’s thoughts: cognitive change. Kabat-Zinn (1990) suggests that this occurs through the practice of nonjudgmental thinking as well as the understanding that thoughts are not necessarily the reality or the truth.

3 Self-Management: Mindfulness practice, sitting and attending to one’s thought is in itself a self-management intervention. Again, the first stage in change is self-awareness of a problem or pattern. By sitting and using focused awareness on what’s happening at the moment the urges emerge; the triggers and stressors may also come into awareness and facilitate more active problem solving (Hooker & Fodor, 2008). Further, Mindfulness increases awareness which allows individuals to respond to the situation at hand, instead of automatically reacting to it on the basis of past experiences (Proulx, 2003).
4 **Relaxation:** Meditation often induces relaxation, which may contribute to the management of stress related medical disorders (Kabat-Zinn & Chapman-Waldrop, 1988). Here, it is very important to understand that relaxation associated with mindfulness meditation is contrasted with behavioural relaxation techniques in that the goal of mindfulness meditation is not to induce relaxation of the body but rather to cultivate awareness and stay present with whatever thoughts or body sensation arise in the moment (Kabat-Zinn 1990). Moreover, a randomized controlled trial showed that while both mindfulness practice and relaxation training reduced distress and produced positive mood states, only mindfulness practice led to significant decreases in ruminative thoughts which partially mediated its therapeutic effect on distress (Jain, Shapiro, Swanick, et al., 2007).

5 **Acceptance:** Acceptance, the tendency to tolerate, or even approach, unwanted internal experiences rather than avoid them. It involves “experiencing events fully and without defense as they are” which include acceptance of pain, thoughts, feelings, urges, or other bodily, cognitive, and emotional phenomena, without trying to change, escape, or avoid them (Hayes, 1994). This can help an individual to accept reality and the present situation without reacting impulsively and engaging in maladaptive behaviors, in an attempt to alter the situation such as taking alcohol at times of anxiety arousing situations. In working with medical and clinical populations, mindfulness training includes an acceptance of pain, worries, thoughts, and emotions without trying to escape, avoid, or change them. By being willing to stay with the pain and negative emotions, researchers suggest, individuals may benefit through a greater sense of self-acceptance (Baer, 2003).

In addition to above mentioned mechanisms researchers have also suggested alterations in biological pathways affecting health, such as the autonomic nervous system, neuroendocrine function, and the immune system (Ludwig & Kabat-Zinn, 2008). Alidina
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(2010) claimed that mindfulness meditation does change the brain, and the more one practises, the greater the positive change within his brain. Neuroimaging studies have identified specific brain structures active during meditation. Their findings show increased regional blood flow to the anterior cingulate cortex and dorsolateral prefrontal cortex during meditation (Cahn & Polich, 2006). Concerning meditation onset, some functional magnetic resonance imaging (fMRI) studies have employed short periods of meditation (\1 min) that displayed increased activity of different frontal cortical areas including lateral prefrontal cortex (Farb et al. 2007), and increased involvement in viscerosomatic areas, including insula, secondary somatosensory and inferior parietal regions.

Imaging studies have also shown increased gray matter, particularly in the prefrontal cortex, the right anterior insula, and the putamen, areas associated with attention, interoception, and sensory processing, with differences correlating with meditation experience, suggesting neural plasticity with meditation (Lazar, Kerr, Wasserman, et al., 2005; Pagnoni & Cekic, 2007). One recent study (Ho¨lzel et al., 2007) found an increased size of the right anterior insula in a meditation group compared to controls. They also both revealed increases in structures of the left temporal cortex although not in the same exact structures. Goldin and Gross (2010) examined MBSR-related changes in the brain–behavior indices of emotional reactivity and regulation of negative self-beliefs in patients with social anxiety disorder. Sixteen patients underwent functional MRI while reacting to negative self-beliefs and while regulating negative emotions using 2 types of attention deployment emotion regulation—breath-focused attention and distraction-focused attention. Post-MBSR, 14 patients completed neuroimaging assessments. Compared with baseline, MBSR completers showed improvement in anxiety and depression symptoms and self-esteem. Meditators also showed a more robust and effective immune response to an influenza vaccine administered at the end of the training period (Easterlin & Carden˜a, 1998).

Groundbreaking research during the last decades by researchers such as Professor Richard Davidson has provided us with a better
understanding of neurobiological mechanisms of meditation. On the basis of an extensive corpus of both animal and human data, Davidson and colleagues recently suggested (Davidson, Jackson, Kalin, 2000) that prefrontal activation asymmetries are plastic and could be shaped by training. The findings from their study are the first to suggest that meditation can produce increases in relative left-sided anterior activation that are associated with reductions in anxiety and negative affect and increases in positive affect (Davidson, Kabat-Zinn, Schumacher, et al., 2003). So it can be said that the literature on neurobiological mechanism of MBSR is now beginning to emerge and biological methods are expected to answer other related important questions in the near future. Even in this age of advancements in neuroscience research, for a better understanding of many disorders, MBSR still has much to contribute to the overall understanding of mechanism of treatment of different disorders.

**Empirical Evidences of MBSR’s Outcome**

Occurrence of chronic illnesses poses a major life stress that requires considerable physical, emotional, and psychological accommodation and coping. Although initially developed for stress management, it has evolved to encompass the treatment of a variety of health related disorders. It employs mindfulness meditation to alleviate suffering associated with physical, psychosomatic and psychiatric disorders. Over 200 medical centers across the world offer MBSR as an alternative treatment option to patients (Niazi & Niazi, 2011). The reviews generally suggest that MBSR may be beneficial to reduce stress, anxiety, and depression. MBSR helps the patients in adapting to the daily treatment needs and managing the psychosocial issues associated with chronic illness that is challenging and stressful for patients.

Participants in a large number of studies have been found to experience improvements in stress reduction (Astin, 1997); chronic pain (Kabat-Zinn, 1982); anxiety disorders (Miller, Fletcher, & Kabat-Zinn, 1995); worry, rumination, and anxiety (Jain, Shapiro, Swanick, et al., 2007); relapsing depression (Teasdale, Segal, & Williams, 1995); eating disorders (Kristeller & Hallett, 1999); smoking (Davis,
Fleming, Bonus, & Baker (2007); and attention-deficit hyperactivity disorder (Zylowska, Ackerman et al., 2008); sleep complaints (Shapiro, Bootzin et al., 2003); cancer (Specia, Carlson, Goodey, & Angen, 2000); diabetes mellitus (van Son, Nyklíèek, Pop, Pouwer, 2011); hypertension (Schneider, Staggers, Alexander, 1995); human immunodeficiency virus (HIV) infected adults (Creswell, Myers, Cole, 2009); coronary heart disease (Nehra, Sharma et al., 2012); fibromyalgia (Weissbecker et al., 2002); chronic low back pain (Morone, Greco, Weiner, 2008); rheumatoid arthritis (Zautra et al., 2008), and psoriasis (Kabat-Zinn et al., 1998) after MBSR training.

A sample of 136 heterogeneous patients with a variety of medical diagnoses, including chronic pain, hypertension, cancer, sleep disorder, anxiety, panic and depression, were enrolled in 12 different 8-week MBSR groups (Reibel, Greeson, Brainard, Rosenzweig, 2001). Kabat-Zinn (1982) reported on the outcomes of MBSR in a sample of 51 individuals afflicted with chronic pain. Dominant pain categories were back, neck, shoulder and headache. Sixty-five percent of the participants showed a reduction of ³ 33% in pain ratings and 50% showed a reduction of ³ 50%. In addition, 76% of participants reported a reduction in mood disturbance of 33 and 62% of participants reported a reduction of 50%.

Results indicated that participants benefited in reports of health-related quality of life and physical and psychological symptoms. In recent study from India (Nehra, Sharma et al., 2012), it was found that Depression, Anxiety and Perceived Stress are preponderant in patients suffering from Coronary Heart Disease patients’ pre intervention level and reduced significantly post intervention level. These changes were present only in the experimental group whereas control group showed no significant changes.

The results clearly show that MBSR is effectively reduced depression, anxiety, perceived stress in CHD patients. From several studies around the world, a long list of physical and mental disorders that can be well managed with MBSR and a large number of MBSR induced benefits have been recognized, and new disorders and benefits are periodically added to the list as the comprehension of
the MBSR process grows (Nehra, Nehra, Dogra, 2012). In view of above mentioned revolutionary research findings it can be advocated that MBSR may help a broad range of individuals to cope with their clinical problems (Physical and Psychiatric). This intervention is can be an effective component with traditional management in improving emotional well-being in patients with chronic illnesses. The latest scientific researches on mindfulness training are promising but warrant additional study in a larger comparative trial.

**Evaluating the Need For MBSR in Indian Setting**

The numbers of patients with chronic diseases are increasing (Rosamond, Flegal, Furie et al., 2008) and psychosocial factors are now recognized as playing a significant and independent role in the development of physical disorders and its complications. Although, these psychosocial factors appear to be outside the immediate realm of medicine, they have a profound impact on the patient’s quality of life, symptoms severity, disability level (Saravay, 1996), and survival (Krumholz. Butler, Miller et al., 1998). Co-existence of physical and psychiatric disorders makes the situation more dreadful. As a result, there has been a great deal of interest in potential treatments of these factors in chronic disease patients, with the hope that successful mental health treatment may also have a positive effect on physical health outcomes. It is plausible that when one develops chronic and life threatening illness, like CHD, they usually experience negative emotions. The experience of physical disease seems to contribute to risk for numerous psychiatric problems, especially depression, anxiety, and cognitive disorders (Shapiro, Astin, 2005). In addition, patient also experiences increasing concerns about survival, well-being, effects on social roles/relationships/loved ones and concerns about dependency, autonomy along with inciting fears about vitality, sexuality, and mortality. So the recovery from emotional challenge and increased tolerance of negative affect are both hallmarks of holistic (mental and physical) health. MBSR has emerged as a ray of hope to help patients to recover from bad conditions as it has been found efficacious in both kinds of the conditions.
In MBSR program, participant learns how to take care of himself and discovers a deeper sense of ease and tranquillity of mind as well as actively engage in own health and well-being. By focusing on the present, rather than ruminating on the past or worrying about the future, patients can more effectively deal with life stressors that frequently lead to feelings of anxiety and depression (Kabat-Zinn, 2003). Non-judgmental observation allows people to experience phenomena with a novel openness that invites more objective emotional and behavioural reactions (Brown et al., 2007). One of the most valuable teachings and principles that mindfulness-based programmes are based on (e.g., MBSR, Kabat-Zinn, 1990, and MBCT, Segal, Williams & Teasdale, 2002) is the idea of not being your own thoughts. It was found that the patients with chronic illnesses, who had become disillusioned with the slow progress or no program in their symptoms, were helped with MBSR by decreasing distress and enhancing self-reported well-being. They started believing that the problem is not to eliminate the distressing thoughts that are generated, but rather to dis-identify themselves from their thoughts. In this regard, Mindfulness based interventions are believed to counter experiential avoidance strategies that maintain and exacerbate emotional disorders, in part by teaching patients to respond reflectively rather than reflexively to stressful situations and negative emotions (Bishop, Lau, Shapiro, et al., 2004). There is one point to remember that the aim of these psychological interventions is not to replace medical treatment but to be used as an essential complement to it, to improve patients’ quality of life and to reduce psychological distress, which in theory would ultimately improve clinical outcomes (Kabat-Zinn, 1990) and well-being (see Grossman, Niemann, Schmidt, & Walach, 2004, for a metaanalysis).

MBSR is one of the most extensively researched psychological approaches and is increasingly being recognized as the gold standard for many psychological and physical disorders. Although early implementations of MBSR were largely indicated for physical disorders, more recent clinical and research efforts have begun to apply MBSR for wider range of problems (psychiatric too) as well
as with healthy people, health professionals, student. So it is appropriate to say that in future also MBSR will be regarded as the most preferred psychological treatment for many disorders as well a structured program to diminish distress and improve quality of life (Nehra, Nehra, Dogra, 2012).

CONCLUSION
The relation between psychological factors and medical conditions has been the subject of research since past few decades and over that time the evidence of links between them has continued to grow. Psychological factors co-occurring with medical problems or vice versa are highly prevalent and associated with a wide range of adverse outcomes. It seems particularly true in the case of established chronic illnesses, where anxiety, depression and perceived stress are predictive of adverse short-term and long-term outcomes. These factors not only have a major impact on the quality of life of patients but also negatively affect the long term outcome in these patients. Since chronic illnesses (such as Coronary Heart Disease) is a multifactorial process, intervention programs should be multi-factorial based and involve psychological interventions along with the routine medical care. Research had demonstrated that MBSR alleviate suffering associated with medical and psychiatric conditions and improve quality of life. MBSR has been proven effective in lists of studies; it can be consider that MBSR is well positioned to become a dominant approach. But this is only one side of the coin. The other side of the coin shows that most of the efficacious research has been done in Western setting and only few meta-analyses have been done to this point. Despite strong evidence on the efficacy of MBSR for psychiatric and physical disorders, notably fewer studies has been conducted in Indian settings, and indicate a strong need to conduct MBSR related studies in our setting also. In spite of lacunae of related studies in our country, there are a growing number of studies from different parts of world that indicate a positive effect of mindfulness intervention on several different disorders. Hence, it can be said with a great confidence that MBSR is an important intervention step towards developing a comprehensive
psychological management program for medical as well as psychiatric patients.

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