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MINDFULNESS AND MEDITATION

G. ALAN MARLATT AND JEAN L. KRISTELLER

The purpose of this chapter is to illuminate the role of meditation and mindfulness in clinical therapy. Although meditation has also been shown to be helpful in the treatment of physical disease (e.g., cancer and AIDS), the primary application here is in the treatment of psychological and behavioral problems. In this chapter, we draw on our experiences in meditation practice as well as on our research and clinical work and that of others. Our clinical practices have included addictive behaviors, particularly alcoholism and eating disorders, general behavioral medicine, and anxiety and depressive disorders. The clinical approaches described here have also been used with a wide variety of clinical problems including the treatment of personality and conduct disorders as well as relationship problems.

The material in this chapter is organized as follows. The first section is devoted to a discussion of definitions and types of meditation practice, followed by a brief review of theories about how meditation may work (mechanisms of action). In the second section, various applications and examples of meditation practice are reviewed, along with specific instructions on how to implement them in clinical practice. In the third and final section, research designed to evaluate the clinical effectiveness of meditation is reviewed, along with a discussion of future trends. Throughout,

there is consideration of how these meditative techniques may relate to issues of spirituality.

MEDITATION AND MINDFULNESS: DEFINITIONS AND THEORIES

Meditation practice is often identified as a relaxation technique (Benson & Proctor, 1984). Although this is certainly a legitimate aspect of meditation, and one that has made these techniques more easily understood, our primary focus is on meditation as an approach to developing mindfulness, whether at a physical, psychological, or spiritual level. The meditation techniques that have gained the most attention within clinical practice in the United States in the past several decades have come from Eastern traditions, in which the physical, psychological, and spiritual aspects of the self are not seen as distinct as they are in Western traditions. Hence, there is sometimes confusion or concern that meditation practices are in some way antithetical to Western or Christian religious or spiritual practice and belief. In fact, virtually all spiritual traditions have created meditative practices.

Although we primarily address clinical and research evidence based on Eastern traditions, we believe that recognizing and acknowledging the universality of this experience are critical. The full value of meditative practices is best understood as tapping into the universal potential for the human mind to transcend its preoccupation with negative experiences—with fears, anxiety, anger, and obsessions—and to become more comfortable with the experiences of compassion, acceptance, and forgiveness (Huxley, 1944).

What is mindfulness? To be fully mindful in the present moment is to be aware of the full range of experiences that exist in the here and now. It is bringing one's complete attention to the present experience on a moment to moment basis. As defined by two leading meditation teachers,

> mindfulness means seeing how things are, directly and immediately seeing for oneself that which is present and true. It has a quality of fullness and impeccability to it, a bringing of our whole heart and mind, our full attention, to each moment. (Goldstein & Kornfield, 1987, p. 62)

Mindful awareness is based on an attitude of acceptance. Rather than judging one's experiences as good or bad, healthy or sick, worthy or unworthy, mindfulness accepts all personal experiences (e.g., thoughts, emotions, events) as just "what is" in the present moment. Mindful

acceptance of difficult thoughts or emotional states often transcends their negativity:

> The practice of mindfulness defuses our negativity, aggression, and turbulent emotions. . . . Rather than suppressing emotions or indulging in them, here it is important to view them, and your thoughts, and whatever arises with an acceptance and generosity that are as open and spacious as possible. (Sogyal, 1992, p. 123)

Perhaps the most significant clinical application of mindfulness is the capacity to adopt an "observing self" (Deikman, 1982) that pays careful attention to one's thoughts and feelings as they occur in the present moment. This observing self is also what connects meditation as part of psychotherapy to behavioral techniques such as self-monitoring and to cognitive techniques in which characteristic distorted or dysfunctional thoughts are systematically identified. Although these approaches have documented value, they still leave the individual accepting the conditioning or thought patterns as "themselves." Rather than "overidentifying" with one's thoughts or feelings, mindfulness allows people to see their thoughts as "just thinking," not as personal directives that they must identify with, follow, or give into:

> The practice of mindfulness is not reserved for the meditation cushion. . . . If we are able to wake up, if only occasionally and for a few moments at first, stand back from the ongoing drama of our lives and take an objective look at the habit patterns in which we are caught, then their compulsive hold over us begins to loosen. We dis-identify from them; that is, we begin to see that those thoughts and feelings are not us. They come along accidentally. They are neither an organic part of us nor are we obliged to follow them. (Snelling, 1991, p. 55)

John Teasdale, a professor of psychology in the United Kingdom, conducted a study on mindfulness meditation as a relapse prevention treatment for depression (Teasdale, Segal, & Williams, 1995). In a discussion of his preliminary results, Teasdale (1997) illustrated the difference between the meditation treatment condition included in his study and a more standardized cognitive therapy approach. He first presented the following negative thought as expressed by one of his depressed clients: "My life is a failure; I am miserable and see no reason to go on living." A cognitive therapist would try to help this client change the content of his thoughts, perhaps by suggesting counterexamples to minimize overgeneralization or other cognitive distortions (Beck, Wright, Newman, & Liese, 1993).

In contrast, the aim of meditation therapy is not to change the content of the thought itself but to alter the client's attitude or relationship to the thought, Teasdale stated. Thinking that "my life is a failure" is accepted as just a thought that occurred in the mind. In this sense, the thinking mind is regarded as being similar to one of the five senses that

registers (but does not cause) visual, auditory, and other incoming stimuli. Negative thoughts are similarly registered and noticed as "thought stimuli" that are occurring in the mind. As such, negative thoughts are not overpersonalized and do not serve as dictators of subsequent feelings and activities (e.g., suicide attempts). As indicated by the title of a recent book on meditation and psychotherapy, *Thoughts Without a Thinker* (Epstein, 1996), thoughts are accepted as the natural behavior of the mind, but not as inherently defining the self.

The meditation literature describes many different meditative practices (Goleman, 1977; Shapiro & Walsh, 1984). Most reviewers of this literature have referred to two basic types of meditation practice: concentrative meditation and mindfulness meditation (Smith, 1975). Mindfulness meditation is also referred to as "opening up," insight, or Vipassana meditation. Concentrative practices focus on a specific object of attention, such as awareness of the breath (paying close attention to the physical sensations of breathing in and out). Other objects of concentration may include a visual target such as a candle flame or mandala, or the sound of a repeated word or mantra. In transcendental meditation (TM), practitioners repeat a Sanskrit term as the focus of their meditation (O'Connell & Alexander, 1994); secularized versions of this method have substituted the word "one" (Benson & Proctor, 1984), or encourage the practitioner to select a word or sound of their choice (Carrington, 1998). An example of a concentrative meditation practice is given below in the section on clinical applications.

In insight or mindfulness practices, the meditator is instructed to develop an awareness of any mental content, including thoughts, imagery, physical sensations, or feelings, as they consciously occur on a moment-to-moment basis. As with concentrative meditation, the overall focus is on paying close attention to one's immediate experience in an attitude of acceptance and "loving kindness." The two types of practice are often combined, as in the teaching of insight or Vipassana meditation (Goldstein & Kornfield, 1987; Kabat-Zinn, 1990). In 10-day Vipassana meditation retreats, the first 3 days are devoted to practicing concentrative meditation (a focus on the breath) before beginning a week of insight meditation (a focus on physical sensations and thoughts as they occur in the moment). Vipassana is the Buddhist tradition from which most mindfulness techniques derive.

Both concentrative and insight meditation techniques are associated with two main processes: (a) the direct experience of "impermanence" or the constantly changing nature of perceived reality, and (b) the ability to self-monitor subjective events from the perspective of an objective or detached observer. Both have important clinical implications.

As an illustration of the first outcome, one of us (G.A.M.) once attended a meditation retreat in which he experienced considerable pain

in his knees while seated cross-legged for long hours in meditation. As he later wrote in his journal,

> At one point, the pain became almost unbearable, and I felt compelled to stretch out my legs to release the pressure. The meditation teacher instructed me to resist this strong urge to move my legs, and instead to continue sitting in the same posture while carefully observing the painful sensations I felt in my knees.
>
> At first the pain seemed solid and unyielding in its aversiveness. After "watching" the pain for several minutes, however, I began to notice small changes. Instead of feeling one solid, unchanging block of pain stimuli, I began to notice that the pain signal changed subtly over time. Instead of one solid block of pain, careful attention showed me that the pain signal pulsed in waves of intensity that went up and down. I began to notice periods of "less pain" between pulses of more intense pain in an "in and out" kind of pattern. Once my awareness focused on the spaces of "less pain" that occurred between the more painful pulses, my basic attitude changed as I began to "open up" to the pain experience. Although the pain was still present, it felt less intense, as though my awareness could "see through" the pain to the other side. The spaces between the pain stimuli widened, and I felt my urge to do anything to escape or avoid the pain diminish. The painful sensations rose and fell like waves on the sea, and I was able to find a balance point between the crests of intense sensations. Of course, I was still very thankful when the meditation period was finally over and I could stretch my legs with great relief.

The second process that develops in meditation is the ability to step aside from one's own mental and subjective functioning and to observe the stream of consciousness from the perspective of a vigilant but detached observer. It is in this way that meditation is similar to the behavioral technique of self-monitoring, in which clients are asked to observe or to keep a record of their ongoing thoughts or behavior. Langer (1989) also described a cognitive theory of mindfulness and its relation to health promotion and disease prevention. In all these areas of application, the individual is trained to adopt an objective perspective of self-observation based on an attitude of acceptance and nonevaluation.

The meditative practice of self-monitoring thoughts and other mental events often leads the individual to become less identified with his or her own thought processes ("thoughts without a thinker"), no matter how upsetting or infatuating they may otherwise be. The meditator can learn to develop a sense of equanimity or balance without being absorbed into his or her own mental processes. This process of "mental disidentification" is nicely illustrated in the following passage taken from a book on meditation practice:

> An image about practicing meditation that may be helpful is that of standing at a railroad crossing, watching a freight train passing by. In

each transparent boxcar, there is a thought. We try to look straight ahead into the present, but our attachments draw our attention into the contents of the passing boxcars: we identify with the various thoughts. . . . So, we're looking straight ahead, not distracted by any of the contents, when all of a sudden one of the boxcars explodes as it goes by. We're drawn into that one, we jump into the action in that boxcar. Then we come back with a wry smile full of recognition that it was just an image of an explosion, just a boxcar thought. Then, we notice as we look straight ahead that we're starting to be able to see between the cars. And we begin to see what's on the other side of the train, what is beyond thought. We experience that the process is occurring against a background of undifferentiated openness, that, moment to moment, mind is arising and passing away in vast space. As we experience the frame of reference in which all this melodrama is occurring, it begins freeing us from being so carried away—even by fear. We start seeing. (Levine, 1979, pp. 29–31)

MODELS OF MEDITATION EFFECTS

There are several theoretical models that have been advanced by both researchers and therapists to explain the beneficial effects of meditation (Shapiro & Walsh, 1984). Although space does not permit a full discussion of all approaches, consider the following models in terms of their clinical implications: (a) as a physiological relaxation technique; (b) as a way of changing neurological function; (c) as a type of positive addiction; (d) as a metacognitive intervention; and (e) as promoting spiritual and existential growth.

Relaxation

The first model considers meditation effective to the extent that it elicits a state of deep physical relaxation. Research on the physiological effects of meditation shows that individuals engaged in meditative practice exhibit what has been called a "wakeful hypometabolic state" (Wallace, Benson, & Wilson, 1984), demonstrated by changes such as reduced oxygen consumption, decreased sympathetic activity in the autonomic nervous system, and muscle relaxation (Orme-Johnson, 1984). Changes in brain wave activity, consistent with more relaxation, have also been demonstrated. Because many types of meditation and relaxation procedures produce a similar response, Benson and Proctor (1984) referred to this reaction as the "basic relaxation response." This model is most frequently used when including meditation as a basic behavioral relaxation technique, either as a way to reduce chronic states of tension through daily practice or as a component of treatment in which anxiety-producing mental content may

become desensitized through extinction or counterconditioning (Goleman, 1971; Goleman & Schwartz, 1984).

Neurological Processing

Other researchers have developed a model based on studies of electroencephalographic changes that occur during meditation (Glueck & Stroebel, 1984; Kasamatsu & Hirai, 1966) that underlie a sense of altered consciousness. Studies have shown, for example, that meditation is capable of producing changes in hemispheric laterality (Bennett & Trinder, 1984). Pagano and Frumkin (1984) found that meditation selectively influences right-hemisphere functioning. These findings have led some theorists to postulate that meditation may be effective by changing symmetry in hemispheric brain activity (Ley & Smylie, 1989; Ornstein, 1972).

Positive Addiction

Glasser (1976) defined meditation as one of several potential "positive addictions." As with exercise and other lifestyle habits, the regular practice of meditation can become intrinsically rewarding. A "positive" addiction has six characterics: The activity is noncompetitive, it is easily accomplished, it can be done alone, it has positive value, improvement needs to be judged only by the person, and it can be done without self-criticism. Meditation practice has all these characteristics.

Metacognitive Intervention

Many meditation practices have in common the use of a repetitive object of awareness, such as focusing on the breath in mindfulness meditation. A gradual change in one's attitude toward thinking, particularly in terms of how cognitions may give rise to negative or disturbing emotions, appears central to many reports of therapeutic benefit. From this perspective, meditation is primarily a metacognitive practice. Meditation does not involve normal analytical thinking processes (Goleman, 1971), yet a critical aspect of most practices is a sense of heightened but detached awareness of sensory and thought experience. Understanding the therapeutic value of this process may represent a particularly important integration of Eastern and Western psychologies (Walsh, 1996).

Spiritual and Existential Practice

The Eastern meditation practices currently in use in the United States have derived primarily from traditional sources in Hinduism and Buddhism. Disengaging meditation from its Eastern roots as recommended by some

authors (Benson & Proctor, 1984; Kabat-Zinn, 1990) may make this practice more appealing and acceptable within Western psychotherapy practice (Carrington, 1998; Shapiro & Walsh, 1984). However, leaving out the spiritual aspect of meditation practice may limit a full understanding of the potential of this practice (Benson & Proctor, 1984; Goldstein & Kornfeld, 1987). To the extent that spiritual experience is a universal human capacity, meditation has been proposed, and experienced by many, as a way to cultivate a sense of inner calm, harmony, and transcendence often associated with spiritual growth (O'Murchu, 1994). Meditation may accomplish this by providing a technique that "turns off" or "bypasses" cognitive processing of usual daily preoccupations and concerns, allowing access to these other aspects of being.

Each of the above models appears to have some merit, based on both research and clinical practice experience. Future research is needed to further clarify the mechanism and effective "active ingredients" of meditation.

MEDITATION TECHNIQUES IN CLINICAL PRACTICE

This section is devoted to the clinical application of meditation. As a global method of stress management, relaxation, and personal centering, we recommend meditation as a method to attain a balanced lifestyle. The topic of lifestyle balance (Marlatt, 1985) can be introduced early in the clinical process. Describe lifestyle balance as a global intervention designed to produce a sense of balance or harmony in one's daily habits and introduce a menu of activities with several options including meditation and exercise. Encourage clients to practice engaging in one or more of these activities throughout each week of therapy until they find the right balance between physical activities (exercise) and mental relaxation (meditation). Both exercise and meditation are described as potential "positive addictions" that can be practiced on a regular basis as a means of achieving greater harmony or balance in daily activities.

For clients who are new to meditation practice, we recommend beginning with instruction in a basic practice of concentrative meditation. After introducing the topic of meditation, the client engages in the technique for a 10-min supervised practice session (described below).

First, explore the client's prior conceptions and associations as well as any experiences with meditation. For those who have already learned a meditation practice, we discuss issues of implementation or possible barriers to regular practice. Newcomers to meditation may hold preconceptions of meditation that range from a romanticized view of it as a "magic" formula to a hostile defensive perception that it represents a foreign religious practice. It may also be seen as simply a relaxation method that has limited value for them. After exploring these beliefs and feelings, it may be useful

to reframe meditative techniques as having their source in a wide range of cultural traditions. A common benefit is that meditation elicits both physical and psychological relaxation and fosters a "release" from the types of issues that brought the person to therapy. Using a metaphor that illustrates the idea of letting go or nonattachment can often be useful. For example, describe meditation as being similar to sitting on the bank of a swift-flowing river, observing the flow of the water as it passes by, without getting caught in either the past ("upstream" thoughts) or the future ("downstream" thoughts). Phrases such as finding "inner wisdom" or "inner peace" are relatively nonthreatening but capture a sense of the larger purpose involved.

After discussion and questions about meditation are completed, give the client instructions for a practice session in the office. Then ask the client to practice the technique on a daily basis at home between clinical sessions. Meditating with the client during the first practice session both provides a model and creates less self-consciousness for him or her. Have the client assume a comfortable sitting position, holding the back in a straight, upward position (either sitting in a straight chair with feet on the floor or on a cushion with legs folded). The rationale for this posture is to promote relaxed wakefulness rather than a relaxed state that easily descends into sleep. Eyes are closed or can be left in a half-open position with one's gaze facing ahead and slightly downward. Use variations of the following instructions while sitting in meditation along with the client:

> First, take a few deep breaths and notice the flow of air as you inhale, then gently exhale, again noticing the physical sensations of your outbreath. . . . Throughout this time, your job is to pay close attention to your breathing, breath by breath. It is best to breathe in and out through your nose, unless it's more comfortable to breathe through your mouth. Allow your breathing to relax and gradually assume a natural pace and rhythm as you first inhale, then exhale, slowly and deeply. Pay close and deep attention to the physical sensations that accompany each inbreath and outbreath. Notice that your breath is cool as it flows in at the tip of your nose and warm as it flows out. Notice the precise and subtle sensations of your breath as it passes in and out of your nostrils. Notice the rising and falling of your chest or abdomen as you take each breath, one at a time. Be a relaxed but aware observer of your breathing process as it occurs naturally.
>
> When you become distracted by events other than your breathing, such as thoughts that arise in your mind, sounds in the room, or feelings that occur in your body, first become aware that you are becoming distracted and then gently return your full attention once again to the breath and its rising and falling, in and out. Treat all distractions (external sounds or outside events) in the same gentle manner: First recognize that you are no longer paying attention to your breath and then gently but firmly turn your attention back to your breathing.

After giving the above instructions, continue the meditation practice session for about 10 min in silence. Initially, it maybe useful to briefly repeat the instructions related to becoming distracted and to remind the client that distraction is normal. A small bell or gong can be used to signal the end of the meditation period: "When you hear the sound of the gong ringing, move around gently, bring yourself back into the space of the room, and gently open your eyes whenever you feel ready to do so." Then take a few minutes to discuss the client's reactions and any questions about the experience. It is important to probe whether any particular feelings of uneasiness or discomfort occurred.

For clients who have difficulty maintaining a focus on the breath or for whom intrusive thoughts are a presenting part of their problem, using a mantra-focused concentrative meditation technique is often helpful. The term *mantra* may have undesirable connotations for some clients, either because it implies a "magical" effect or because it connotes an unfamiliar religious practice. Tell such clients that many meditation practices focus awareness on a specific object or event, including sounds, the breath, movement, and visual images, to calm and balance the mind. Rather than providing a specific mantra (a sound, word, or phrase), as is done in some formal meditation practices, we offer clients a range of possible sounds and words, asking them to choose the one that "feels right" or elicits associations of concentration and calmness. We recommend words such as "calm," "peace," "maa," and "alm," noting to the client that this last sound is the word *calm* with the harsh *k* sound removed, thereby emphasizing the value of the sound itself over the meaning of the word. The only type of word that we discourage is the name of a family member, such as a mother or spouse, explaining that a neutral word or sound might be more useful. For clients with even more difficulty concentrating, the simple counting of breaths (from 1 to 10, and over again) appears to be effective and acceptable.

Some clients may become disconcerted with feelings of dissociation; these are often related to the novel experience of holding the body extremely still, so that the normal proprioceptive feedback from joints does not occur. This sometimes results in a feeling of floating. Although this feeling can be enjoyable and may mark an ability to become more engaged in the meditation task, for others the experience may need to be explained and normalized. The experience of dissociation occasionally appears to be more psychological in nature, in which trancelike feelings are quickly attained or in which disturbing thoughts begin to flood the mind. It is difficult to predict with whom this may occur, although there is limited evidence, consistent with our experience, that individuals with histories of obsessive–compulsive disorder or past trauma may be more susceptible (Carrington, 1998). For example, a 35-year-old woman being seen by J.K. for smoking intervention secondary to debilitating lung disease, who had

a history of severe childhood sexual abuse, found that meditating for even a few minutes was accompanied by a flood of unbearable thoughts and images related to this abuse. Although she had had a course of productive therapy earlier in adulthood, this experience with meditation led us to explore whether more therapy work was needed—and led her to realize that one of the ways she kept these thoughts blocked out was by smoking. In this case, she decided to return to her former therapist, with successful results. In another case, a woman with histrionic features appeared to respond well to meditation instruction at first, but after several weeks of practice, it became apparent that she was using meditation techniques to induce a trancelike dissociation that distanced her from dealing with some people and experiences around her. At one point she noted, "It's wonderful! I can be in the room with my husband and he's talking to me—and he doesn't even notice that I'm 'not there'!"

However, meditation can also be used productively by individuals who have histories of severe psychiatric disturbance. A 60-year-old man seen by one of us for debilitating anxiety and depression, with a history of mild obsessive–compulsive disorder, found that using meditation gave him "permission"—and the ability—to engage in "dialogues" between his "wise self" and himself as a 7-year-old boy. Although he did not find formal meditation practice appealing, a growing awareness and the use of these internal dialogues (although his report of them at times appeared somewhat dissociative) led to a growing confidence in himself and ability to resist almost tortuous fears. In another case seen by J.K., a young woman who had recurrent hospitalizations for paranoid schizophrenia was reluctantly allowed to join a stress management group in which meditation was introduced as the primary relaxation technique. She had no problems with dissociative experiences and was able to use the meditation practice to gain awareness of and distance from the paranoid ideas that she frequently experienced, noting that she stopped finding them as compelling and therefore could keep them from escalating as quickly and intruding on her behavior.

Ask clients to practice the meditation between clinical sessions, ideally on a twice-daily basis, once in the morning after arising and again in the late afternoon or early evening, for periods of 10–20 min at a time. Recommend a quiet place to meditate where the client can be relatively free of outside distractions. It is also helpful to begin each clinical session with a brief, 5-min meditation period, followed by a discussion of the client's progress in his or her meditation practice. In more structured group treatment, use of a meditation tape is often valuable and ensures a more uniform experience (Kabat-Zinn, 1990). However, weaning the individual off the tape can be a problem in maintaining practice.

After the client has become comfortable with the basics of concentrative meditation, usually after a week or two of regular practice, we in-

troduce insight meditation as a means of coping with specific stressful events as they occur "on the spot." Here we explain to clients that the practice they have been learning, to focus awareness during concentrative meditation, can also be applied in the "here and now" as a specific coping strategy. As noted in the previous section, the focus of attention in insight meditation is on whatever is happening in the present moment, in the form of cognitive ideation, physical sensations or feelings, or any other event. Instead of attending only to the breath, we describe awareness as being similar to the beam of a flashlight, illuminating whatever exists in its path of light. The object here is to attend to "just what is," to see events clearly without the "excess baggage" of mental judgment or evaluation.

As an example of this insight meditation procedure, Marlatt (1994) developed the technique of "urge surfing" in the treatment of addictive behaviors. Designed as a relapse prevention method, the purpose of urge surfing is to help clients cope with craving or urges that otherwise might trigger a setback or lapse. Ask the client to first self-monitor any urges, cravings, or strong desires to engage in the target behavior (e.g., to ingest a substance or to engage in a high-risk sexual behavior). Encourage clients to identify the specific form that the urge takes when it occurs. Urges often take the form of a verbal intent or command, such as "I must smoke or I will go nuts" or "Just this once won't hurt me" or "Damn it! I OWE myself a drink after this!" Such verbal statements may or may not be accompanied by strong physical sensations or desire cravings. Such urge reactions often appear to take the form of classically conditioned responses, usually triggered by a cue or situation associated with the target behavior (e.g., a recent ex-smoker sees an open pack of cigarettes lying on the table). Contextual and environmental factors such as the client's mood and social environment may also elicit strong urges to indulge.

This method first arose in the course of working with a client who was trying to give up smoking. After he had quit for a week, he reported constant urges to smoke that felt like a growing ball of discomfort that was increasing in intensity to the point that he felt that he would "go crazy" unless he gave in. Recalling a prior account of his reputation as a surfer during his youth, the therapist asked, "What if you could see the craving in the form of a cresting wave instead of a growing ball?" We then discussed his experience as a budding surfer. He described how he learned to keep his balance as the ocean wave swelled up beneath his surfboard and he rode the wave as it finally crested and diminished in size. He learned to keep his balance without being "wiped out" by the wave. He agreed to transfer this surfing metaphor to his meditation practice. As soon as he experienced any indication of a rising urge in his thoughts or feelings, he would direct his full attention to this growing wave while keeping his balance until the wave gradually crested and subsided. Because many urges

in fact take the form of conditioned responses elicited by trigger events, their duration and intensity do not necessarily last unless they are reinforced by engaging in a consummatory response (smoking or drinking). The client reported using this meditative urge surfing technique as an effective means of coping with cravings to smoke.

This use of focused but detached awareness can be applied as a means of coping with other cognitive and physiological aspects of behavioral problems. One client seen by J.K. reported successfully coping with compulsive thoughts that would otherwise trigger an episode of binge eating. When she applied the insight meditation technique to observe her own thoughts before a binge, she described them as the thoughts of a "dictator" who ordered her what to do next. The voice dictated to her, "You must eat more cookies until you have finished the entire box!" Instead of just giving in to this dictating thought, she began to label it as "just a thought." By standing back and objectively observing her own thoughts, she found a space in which she did not have to obey the command.

Another characteristic of disordered eating that responds well to insight meditation are experiences of overwhelming hunger, especially those triggered by emotions or situations such as seeing a well-liked food. Again, this is a way in which conditioned response eating can be curtailed by simply noting the feeling, staying aware of it, and keeping in mind that it is "just a feeling." Women with binge eating disorders substantially decreased the frequency and intensity of bingeing while increasing their sense of mindful control around food during a 6-week treatment program that introduced them to meditation and mindful eating (Kristeller & Hallett, in press). Similar successes were reported by clients with panic attacks who participated in the mindfulness meditation program at the University of Massachusetts Medical Center (Kabat-Zinn et al., 1992). They found that over the course of the 8 weeks, mild anxiety reactions that had previously developed into full-blown attacks were curtailed because, by simply noting and watching these milder symptoms rather than "panicking," they were able to keep them at a reduced level and continue with their normal activities.

EVALUATING THE EFFECTIVENESS OF MÉDITATION

Understanding the mechanisms related to the clinical application of meditation first began to draw considerable attention in the 1970s, both spurring and being associated with an increasing interest in applying contemporary psychological research methods to understand the relationship between mind and body (Shapiro & Walsh, 1984). The area that has received the most research attention is the impact of meditation practice on stress responses related to anxiety or physiological distress. Systematic study

of experienced practitioners documented the hypometabolic effects of meditation practice (Green, Green, & Walters, 1970; Wallace, Benson, & Wilson, 1971); studies of novice meditators using either TM for the Benson-modified version (Benson & Proctor, 1984) suggested that reductions in autonomic nervous system activity could be reliably and easily maintained (Wallace & Benson, 1972). A study carried out by Cuthbert, Kristeller, Simons, and Lang (1981) established that individuals previously unfamiliar with meditation could use it more effectively than biofeedback to lower their heart rates. This area of research therefore successfully demonstrated the value of simple meditation techniques in assisting individuals to gain a state of increased relaxation. However, certain studies that compared meditation techniques with other types of relaxation (Pagano, Rose, Stivers, & Warrenberg, 1976) called into question the uniqueness of these effects.

Researchers also began to explore whether there were unique effects that could be identified at the level of neurological functioning (Delmonte, 1984). Some researchers continued to use a "relaxation" model, measuring shifts in dominant brain wave activity consistent with a more relaxed state, but other researchers began to investigate more sophisticated models exploring laterality effects that were proposed to be related to achieving "altered states of consciousness." Ley and Smylie (1989) provided a critical review of this literature as based on overly simplistic models and understanding of neurological functioning. Given that the understanding and technology of studying brain functioning has improved tremendously in the past 20 years, there may now be more opportunity to gain insight into the specific effects of meditation practice. A detailed review of research findings on the effects of meditation on general metabolic and autonomic functioning has been provided by Shapiro and Walsh (1984).

Meditation has also been applied to the prevention and treatment of addictive behaviors. A recent review of research on the effectiveness of transcendental meditation with alcohol and drug problems documents the overall success of this approach (O'Connell & Alexander, 1994). In a well-compiled meta-analysis of this literature (Alexander, Robinson, & Rainforth, 1994), the authors concluded that use of TM and other meditative methods are highly effective interventions for alcoholism, smoking, and illicit drug use. Although they reviewed a wide range of studies using a variety of research designs, including randomized experimental trials, they also concluded that future researchers need to include more severely addicted users and larger sample sizes.

Mindfulness meditation has also been described as a treatment for alcohol and drug problems. The implications of Buddhist psychology and mindfulness meditation for addiction treatment have been discussed by Groves and Farmer (1994). The effectiveness of this approach, along with a description of various clinical applications of mindfulness and acceptance in addiction treatment, has been discussed by Marlatt (1994). Meditation

has also been found to be an effective intervention for reducing excessive drinking and alcohol problems in young-adult drinkers (Marlatt & Marques, 1977).

A group mindfulness meditation course lasting 8 weeks has been shown to be effective in the treatment of chronic pain (Kabat-Zinn, 1982; Kabat-Zinn, Lepworth, & Burney, 1986). The intensive insight meditation training program described by Kabat-Zinn (1990) has also been applied successfully in the treatment of anxiety disorders (Kabat-Zinn et al., 1992). In this study, using an extended baseline design, 20 of 22 participants who met standard diagnostic criteria for panic or anxiety disorders reduced the frequency of panic attacks to minimal levels and their self-reported anxiety into the normal range. These results were sustained after several months' follow-up. Although these results are clinically impressive, a randomized clinical trial testing this type of intervention is still needed.

Substantial research currently in progress may shed more light on the effectiveness of meditation techniques in other populations. Zen meditation and perspectives have influenced the development of dialetical behavior therapy in the treatment of borderline personality disorder (Linehan, 1993). Ongoing studies applying meditation in the treatment of depression (Teasdale, 1997) will provide further information about the effectiveness of this procedure. Another area that is in need of systematic attention from a research perspective is the effect of meditation on spiritual experience. Although innumerable personal accounts exist regarding the positive impact of meditation on the ability to experience meaning, gain a sense of transcendence, and feelings of peace, these dimensions have generally not been systematically measured and evaluated in practicing meditators. Systematically examining the relationship between meditation practice, spirituality, and therapeutic healing therefore remains one of the most significant opportunities in this area. Measures of spirituality are becoming available (e.g., Kass, Friedman, Lesserman, Zuttermeister, & Benson, 1991). This, then, is one of the foremost challenges for future understanding of how meditation as part of the therapeutic process relates to spiritual growth and development.

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