Guided Imagery as Treatment and Prevention for Anxiety, Chronic Stress, and Illness

A Research Paper

Presented to

The Faculty of the Adler Graduate School

In Partial Fulfillment of the Requirements for

The Degree of Master of Arts in

Marriage and Family Therapy

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2013
Abstract

The objective of this paper is to determine whether learning and practicing mindfulness techniques, particularly guided imagery, helps reduce symptoms of anxiety in children and adolescents. The purpose is to explore non-pharmaceutical options for stress reduction, prevention of chronic illness later in life, and symptom relief as a first line of defense for parents of children suffering from anxiety symptoms related to general anxiety disorder, social anxiety, panic attacks, school or test anxiety, separation anxiety or situational anxiety such as before and during medical procedures. The literature review consists of 45 peer reviewed articles found in the Ebscohost data base. The research was narrowed to 15 closely related articles. The hypothesis is that using guided imagery as a self regulation treatment as well as prevention against childhood anxiety manifesting into disorders and diseases later in life is useful. Also discussed in this review are settings for teaching guided imagery, implications of the findings, and directions for future research.

*Keywords*: adolescent, anxiety, child, chronic illness, guided imagery, meditation, mindfulness, self regulation, stress
Guided Imagery as Treatment and Prevention for Anxiety, Chronic Stress and Illness

In recent years, there has been an increase in interest in mindfulness practices in western culture. There are a host of mindfulness practices including relaxation techniques, meditation, and guided imagery, to name a few. Researchers have been studying for quite some time such practices and their applications as they relate to anxiety. The focus of this paper is how the application of relaxation, mindfulness, and particularly guided imagery relate to anxiety in children and adolescents.

One study found that almost 70% of a sample of 8 to 13-year-old children reported worrying (Ellis & Hudson, 2010). “Research also suggests that worrying produces several negative consequences including difficulties in self regulation of cognition and emotion” (Ellis & Hudson, 2010, p.153).

Given the significance of anxiety in children, this literature review seeks to enhance the understanding of child and adolescent anxiety through evaluating the applicability of guided imagery as a self-regulation treatment and prevention of the manifestation of anxiety and other stress related diseases into adulthood. The question to be answered is how does guided imagery relate to anxiety symptoms in children and adolescents and can guided imagery be used as treatment as well as prevention of such symptoms?

To address the topic, this review is divided into seven sections. The first section provides an overview of characteristics and physical symptoms of anxiety in children and adolescents. The second section provides a brief overview of the history of meditative practices and guided imagery. The third section looks at practical current and future applications of guided imagery for children and adolescents as they relate to anxiety. The fourth section reviews how childhood anxiety manifests into adult physical disease and why prevention is important. The fifth section
looks at where guided imagery is currently being used, and studied, and the findings of those studies. Section six examines limitations of guided imagery as a treatment and prevention of anxiety. Finally, section seven provides a summary of the information and directions for future research.

**Anxiety Defined: Development, Definition, and Symptoms**

Internalizing emotional symptoms begins at a young age. “Big boys do not cry” or “it is better to keep the peace” are messages children get at an early age. Research indicates that the pre-school years, typically around ages 4 or 5, are a formative time in the development of risk for anxiety (Marks, Taylor, & Weems, 2008).

There are a number of risk factors that are thought to play a part in the development of anxiety. Information processing can be interrupted by faulty, biased, or negative ways of thinking; predisposition due to genetics; or learned behavior through parental or sibling modeling and parental over protection (Marks, Taylor, & Weems, 2008). “By adolescence, with increasingly abstract thinking, there is the capacity to consider potential multiple negative outcomes; this suggests that the capacity for worry increases with cognitive development” (Ellis & Hudson, 2010, p.154).

Generalized anxiety disorder (includes over anxious disorder of children) is classified in the *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition-TR* (American Psychiatric Association, 2000) with the following criteria: excessive anxiety and worry occurring more days than not for at least 6 months about a number of events or activities (such as work or school performance). The person finds it difficult to control the worry. Anxiety interferes with at least three different areas of life. Anxiety or worry causes clinically significant distress or impairment in social, occupational, or other areas of important functioning. The symptoms
should not be related to another medical condition, drug use, or side effect of medications. Panic attacks, social phobia, obsessive compulsive disorder, separation anxiety, post traumatic stress disorder, anorexia nervosa, somatization disorder, and hypochondriasis are all anxiety disorders meeting different criteria (American Psychiatric Association, 2000). For the purpose of this paper, the relationship between anxiety symptoms common to all the above mentioned anxiety disorders are restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and/or sleep disturbance and how they are or are not changed by mindfulness techniques, particularly guided imagery.

**Mindfulness and Guided Imagery: Past, Present, and Future**

Evolved from ancient Buddhist and Yoga practices, mindfulness based therapies have been around more than 300 years but have played no serious part in psychology or psychotherapy until approximately the 1990’s (Dryden & Still, 2006). Today these therapies are being studied and used in contemporary psychotherapy in western culture as a symptom focused treatment (Hofmann, Oh, Sawyer & Witt, 2010). While the term mindfulness is a contemporary term, the practice is derived in ancient practices (Manzaneque et al., 2001). Researchers continue to struggle with an exact definition and how to measure it, most agree that it is a nonjudgmental awareness and acceptance of present moment experience of being in the here and now (Cavanagh et al., 2012).

As used in stress reduction and psychotherapy, participants are led through relaxation and breathing techniques that lead into mental images as guidelines into a story that is used as a catalyst for creative imagination. The relaxation and creative thought processes are skills that can be taught and learned with practice (Myrick & Myrick, 1993). This process usually needs four basic elements: a mental device (sounds, words, guiding story for the purpose of diverting
attention from thoughts); an open mind for the process without interfering thoughts, no concern for performance, relaxed muscle groups (in a comfortable position, eyes closed or fixed in a gaze, the body free of strain or tension), in an environment of decreased or minimal stimuli (Goldberg, 1982).

**Uses and Applications of Mindfulness and Guided Imagery**

**Clinical Uses**

From a clinical standpoint, meditative practices such as guided imagery have been reported to improve several physical and psychological afflictions including anxiety, depression, insomnia and attention deficit hyperactivity disorder (ADHD) (Manzaneque et al., 2001). Improvement of psychological well being and a “significant neuroendocrine modulation in anxious and depressed patients” (Manzaneque et al., 2001, p. 220) appear to be associated with a brief 2 month training in mindfulness practice trial in Spain. The psychological improvements as well as the neuroendocrine psychobiological effects of these patients seemed congruent and as a direct result of this mental training (Manzaneque et al., 2001).

Dialectical behavioral therapy (DBT) and cognitive behavioral therapy (CBT) as evidence based practices use mindfulness as a way to enable people with borderline personality to step back and choose, rather than allow themselves to be carried away by powerful feelings, spiraling cycles, and ruminating thoughts (Dryden & Still 2006).

It is reasonable to think that the ability to interrupt negative thought processes in adults can also be taught to children. This begs the question if the adults currently suffering with borderline personality disorder had been taught these practices early in life, would they be in their current state of affliction?
The majority of studies on uses and applications of guided imagery are qualitative reviews (Hofmann, Oh, Sawyer & Witt, 2010). There are a few studies that sought to measure and quantify imagery techniques for treating distress associated with physical complaints such as chronic pain, coronary artery disease, fibromyalgia, social anxiety disorder, attention deficit hyperactivity disorder (ADHD), arthritis, bipolar disorder, diabetes, insomnia, cancer pain, stroke, and as mood and anxiety symptoms. “The results of these reviews were encouraging; suggesting that mindfulness based stress reduction was moderately effective in these studies” (Hofmann, Oh, Sawyer & Witt, 2010, p. 170-171). Limitations of this study are that it is based on a small number of studies with fairly small sample sizes in each health category per study. In the same review using the same studies, anxiety related to health problems rather than a mood disorder decreased when participants practiced mindfulness techniques (Hofmann, Oh, Sawyer & Witt, 2010). This indicates the potential for a decrease in anxiety regardless of its origin when sufferers practice being mindful.

Comorbidity is common in mental illness and symptoms can be very difficult for patients and their health care teams to manage (Cavanagh et al., 2012, p. 339). “Psychological and stress reduction interventions incorporating mindfulness practices find demonstrated benefits such as reductions in anxiety in patients diagnosed with anxiety disorders as well as comorbid diagnoses. This study shows that mindfulness practices reveal a marked decrease in relapse in patients with recurrent depression disorder, and a reduction in suicidal behavior in patients with borderline personality disorder” (Cavanagh et al., 2012, p. 339).

Other medical uses for guided imagery are indicated in reduction of tension at psychiatric hospitals. Imageries that link together, from one session to the next for multiple sessions, proved
positive in restoring patients’ mood, appetite, zest for life, and willingness to be a participant with their health care team (Schoettle, 1980).

This writer would like to see an increase of guided imagery CD’s used in dentist offices, surgical suites, medical clinics, and hospitals for children, adolescents and adults. Having the option to listen to a guided relaxation could assist in making any undesirable or scary procedure more tolerable. The use of a listening device allows the person to be self sufficient, minimizing any costly training or interruption for staff.

**Uses and Applications of Mindfulness and Guided Imagery**

**Education**

According to Myrick and Myrick (1993), educators use guided imagery as a way to increase personal awareness, creative imagination, artistic expression, and concentration in students. “Imagination is the key to their play, and it involves decision making and problem solving. Teachers, as part of their curriculum, use guided imagery to help children focus attention, retain information and improve psychomotor skills” (Myrick & Myrick, 1993, p. 62). Relaxation in schools positively influenced the ability of elementary-aged children to be more attentive. Similar results were found with middle school students, additionally reducing incidents of fights, discipline referrals, absenteeism, and stress (Myrick & Myrick, 1993).

Stress, anxiety, and chronic worry can produce negative thoughts, disrupt attention, increase self judgment, and interfere with a child’s self esteem and ability to study and make academic progress in school (Semple, Lee, Rosa & Miller, 2010). A few clinical reports (Semple, Lee, Rosa & Miller, 2010) suggest that meditative techniques prove useful in treating anxiety symptoms in children and adolescents. A controlled trial evaluated the effects of mindfulness training on third graders. After 18 weeks of mediation practice, participants reported
significantly lower test anxiety than matched controls. Researchers concluded that mindfulness based techniques could be taught to children as young as 7 years old (Semple, Lee, Rosa & Miller, 2010).

Research reviewed by Semple, Rosa, and Miller (2010) indicate that some treatments for behavioral and attention deficits in children, such as CBT, may be less effective for children than mindfulness practices because emotion regulation is not addressed. Neuroimaging has found that attention regulation circuits that serve both attention and emotional processing are addressed in mindfulness practices (Semple, Lee, Rosa & Miller, 2010).

This writer would like to see an increase of guided imagery used in schools, daycare centers, and preschools as a way to help children relax; to redirect them from undesirable behaviors; in times of separation anxiety from caregivers; in order to teach methods of calming and stress reduction; and to settle children during times of rest. Guided imageries with deep breathing could be used before tests to increase oxygen to the brain and reduce test anxiety. Imagery practices also require children to imagine and use their own creativity.

**Manifestation of Anxiety Guided Imagery as Prevention**

**Manifestation of Illness**

Research conducted on children age 5-6, 8-9, and 11-12 found that children of all ages reported worrying (Ellis & Hudson 2010). In comparison to the younger children, 8-12 year olds reported worrying about a greater number of issues and were able to elaborate more fully on their concerns. These differences were found to be unrelated to verbal fluency (Ellis & Hudson, 2010). Research suggests that long term worry, without proper interventions, has a physiological impact on young people into adulthood. Symptoms of anxiety throughout adolescence are a risk factor for the development of anxiety disorders in adulthood. Anxiety is also associated with the
risk of comorbidity of other disorders. One study found that 62% of youth age 7-18 diagnosed with Generalized Anxiety Disorder (GAD) were also diagnosed with depression. As anxiety and worry become more chronic, pathological levels can be reached (Ellis & Hudson, 2010).

Metacognitive beliefs, worry, and anxiety are being researched as they relate to other mental health diagnosis such as obsessive compulsive disorder (OCD), social phobias, post-traumatic stress disorder (PTSD), hypochondriasis, and auditory hallucinations. Evidence is suggesting that depressed mood and anxiety may be contributing factors in the development of these disorders and, given these developments, it is plausible to conclude that these findings can be applied to better understand the progression of these disorders from childhood through adolescence into adulthood (Ellis & Hudson, 2010). Clearly, more research in this area is necessary.

Awareness that anxiety and stress are major factors in illness and disease is increasing (Goldberg, 1982). Physicians are finding that mindfulness techniques can be useful in reducing symptoms of anxiety disorders as well as anxiety as a side effect that exacerbate other medical conditions such as asthma, tension headaches, pain, or irritable bowel syndrome by simply “incorporating relaxation into daily living” (Goldberg, 1982, p. 483).

Cost

Anxiety and depression often first develop in childhood and adolescence, often times becoming an exacerbated and comorbid issue later in life (Dia & Bradshaw, 2008). Anxiety does not only place a heavy burden on the persons who suffers, but society pays a price as well. A study of adults in the United States in the 1990’s found the annual cost for anxiety disorders to be $42.3 billion (Dia & Bradshaw, 2008). This equates to 31.5% of the total cost for mental health in the U.S. (www.ncbi.nlm.nih.gov). The President’s New Freedom Commission on
Mental Health Care subcommittee Children and Families reviewed a study on prevention programs for adolescents and found that prevention produced a range of small to large effect, suggesting that prevention is an important and effective goal to pursue (Dia & Bradshaw, 2008). The cost benefit of being proactive and teaching people how to self regulate or listen to guided image CD’s is miniscule by comparison of reacting to disease. It is hardly more than the investment of some books or the CD’s themselves. Training parents and professionals may be the largest cost factor.

**Synaptic Brain Changes**

Neurobiology supports mindfulness as a treatment for anxiety (Mayo, 2010). Scientists understand that the nerve cells in our nervous systems are modifiable and that brain structure can change (Mayo, 2010). The amygdala is the communication and processing center for emotion, especially fear and anxiety. This portion of the brain demonstrates plasticity and mindfulness may allow the cortex to establish more effective and efficient synaptic links with the amygdala (Mayo, 2010). “Few studies have addressed the neurobiological underpinnings of meditation. Limited evidence suggests that brain changes occur during prolonged meditation and that mediation activates neural structures involved in attention and control of the autonomic nervous system” (Mayo, 2010, p. 55). Referring to the evidence based mindfulness practice Cognitive Behavioral Therapy (CBT) “…we now know that there are multiple pathways to recovery, and a chemical imbalance itself can be restored in different ways” (Mayo, 2010, p. 56). The main feature to this approach is changing the focus of one’s thought patterns, replacing worry with peaceful thoughts, traveling to another place mentally, or by imagining social interest by doing a good deed, for example. Neuroscientists have evidence that, by paying attention, and focusing
our mind on positive thoughts rather than ruminating about the past or the future, the cortex of the brain is aroused and has an effect on the amygdala (Mayo, 2010).

**Limitations of Research on Guided Imagery**

**Reporting**

According to Weems, Taylor, Marks and Varela (2008), reliability and validity of research on children may be affected by the parents’ perception of their child’s anxiety rather than what is so, resulting in skewed data. In addition, children may under or over-report due to lack of understanding or misinterpreting symptoms of anxiety. However, some adolescents may under report due to stigma, or over-report due to social desirability or drug seeking, for example (Weems, Taylor, Marks, & Varela, 2008). Additionally, Ellis and Hudson (2010) agree that adequate self-report measures are necessary for children and adolescents to report their own symptoms in order to decrease the possibility of parental misreporting. One literature review revealed potential weaknesses in research studies that do not measure the quality of the meditation practice of each participant during the study (Toneatto & Nguyen, 2007). Without measurement of quality, it is difficult to be certain that mindfulness itself is a valid mechanism for symptom relief. Participants could also have a difficult time discerning pre trial assessment symptoms with post-trial assessments due to inability to remember.

**Participant Variables**

Another review addressed the concept that presentation skills, attitude, and beliefs about the practice and experience of the teacher or leader may influence participant’s interest, ability, willingness, and open mindedness (Dryden & Still, 2006). “Acceptance is a prelude to change” (Dryden & Still, 2006, p. 14) argues whether or not there must be an understanding and acceptance of both the illness and mindfulness as a viable intervention in order for positive, long-
term change to take place. Goldberg (1982) argued that a participant’s belief in any treatment has an impact on its effectiveness. Personality characteristics could play a role in treatment outcomes as well as whether the participants are volunteering versus court ordered versus being subject pool status participants (Goldman, Domitor, & Murray, 1979).

The learning curve of each participant could play a role in how effective the treatment is (Goldberg, 1982). Meditation requires practice to become proficient. Participants may give up too soon, have too brief of an exposure, or not put enough dedication into learning and practicing the skill. Adolescents may not want anyone to know they are practicing a therapeutic technique and stop. Goldberg (1982) likens this to learning to play a musical instrument “a beginning pianist is unlikely to master the fundamentals of the instrument before several years of regular practice. However, individual patients and researchers in anxiety-reduction techniques often seem surprised about negative results after a brief training program” (p. 485). Studies of short-term effects of meditation have found it to be no more effective than a placebo therapy, according to Goldberg (1982).

Some parents may have skepticism about relaxation trainings or anything that might be related to what they consider mind control (Myrick & Myrick, 1993). There may also be misconceptions about whether or not guided imagery is religious in nature or closely related to hypnosis or brainwashing. Others may raise concerns about whether or not guided imagery can have negative effects on their children psychologically (Myrick & Myrick, 1993).

**Study Methods**

Subjects were recruited from universities, colleges, elementary schools, junior and senior high schools, hospitals, and other inpatient and outpatient mental health facilities. The participants were voluntary and went through anxiety and depression screening methods to be
selected for their prospective studies. Results were reported by means of participant self report journals or surveys, and biofeedback results measuring muscle relaxation pre and post meditation. Analyses were scored manually or by software programs. The average number of sessions in these studies was 8.6; the average length per session was 2.5 hour trainings, with 20 minute individual daily practice in between sessions. The average number of participants was 39.2. Studies like these are often focused on fast benefits and results. These studies fail to determine whether effects are long-term and sustainable (Cavanagh et al., 2012).

**Discussion**

This literature review concludes that guided imagery is generally effective in reducing stress and anxiety symptoms in adults. Literature also indicates this is true of children and adolescents. However more longitudinal research would be useful in understanding whether or not meditative practices have long term positive effects and are sustainable over time. Guided imagery is indicated in research as being useful for insomnia, ADHD, relaxation, chronic pain, coronary artery disease, fibromyalgia, social anxiety disorder, arthritis, bipolar disorder, diabetes, cancer pain, as well as psychiatric conditions such as mood and anxiety disorders and symptoms (Manzaneque et al., 2001). Since research supports meditative practices for adults with physical and emotional disturbance, it is plausible to think it would be effective for children, considering children tend to be open minded and are used to learning new things. If mindfulness practices were taught to children at a young age, guided imagery could become as common place as any other daily routine. Children and adolescents could listen to recorded guided imagery on electronic devices, adding appeal for them and minimizing involvement from staff or teachers.

Future research on understanding anxiety in children, identifying specific risk factors, and screening tools for children to use interdependently of their parents reporting tools would be
valuable. More research is needed on early intervention targeted specifically at children and adolescents with anxiety, attention, and behavioral concerns for the purpose of preventing anxiety, mood, and other psychological disorders. There is not a lack of research findings that support the hypothesis that guided imagery and other meditative techniques do help reduce anxiety in children, adolescents, and adults. The question to answer now is why its use is not prevalent in western society. What are the barriers of use, now that we have strong evidence that it works? Schools and the medical communities claim to embrace the concept, and yet the use of guided imagery is limited. Advancing the research stream even further in terms of what mindfulness and relaxation techniques such as stress and anxiety reduction can do for prevention of manifestation of disease later in life.

Current prevention strategies are post diagnosis as a reactive approach such as biofeedback, medication and psychotherapy for example. This writer is suggesting teaching guided imagery to children as a first line of defense against the start of worry and anxiety. Teaching this mindful practice would allow children to gain control of ruminating thoughts, help them learn to relax at an early age, and teach them to manage stress throughout life. Learning to practice these techniques at an early age as a lifelong practice may be worth a pound of prevention against the onset of anxiety and stress that manifest in adulthood.
 References


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