

AN HOLISTICALLY BASED APPROACH TO THE TREATMENT OF
SHIFT-WORK SLEEP DISORDER

by

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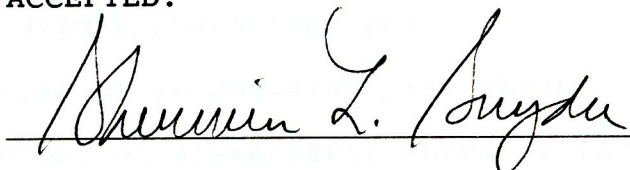
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ABSTRACT

Books and research literature were reviewed in conjunction with data from observations of a single subject, in a one group, pre-test/post-test quasi-experimental design to determine the effectiveness of holistically based mind/body treatments on the problem of insomnia derived from overnight shift-work. In spite of the problems inherent in this particular design, the evidence from this study favors the efficacy of the utilized approaches: hypnotherapy and aromatherapy. Over a nine week treatment period, the subject increased average amount of the first period sleep from 52 minutes to 154 minutes, and the average segmental length of sleep time between wake-ups from 62 minutes to 109 minutes. In addition, the subject showed a decrease in the average number of times he awakened per sleep period, from 6 to 3. The data were generally consistent with research in the areas of sleep disorder treatment, and mind/body medicine (including hypnotherapy and aromatherapy). The one area of inconsistency in these findings was the total amount of sleep experienced by the subject during each sleep session, which decreased from 413 minutes to 376 minutes. Despite this decrease, the subject reported increased satisfaction in the overall quality of sleep.

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CHAPTER 1

THE PROBLEM

Introduction

This study examined the effect of holistically based interventions on insomnia derived from shift-work sleep disorder (SWSD, defined here as a "disturbed sleep/wake pattern in overnight workers). The overall length of sleep was examined, with an emphasis on each segmental length of sleep between wake-ups, during the entire sleep period.

Two forms of holistic treatment consistent with mind-body theory; hypnotherapy and aromatherapy, were explored seperately and in tandem with a single subject as treatments for insomnia resulting from SWSD.

The expected results were that a person utilizing these techniques alone or in tandem would experience an increase in the length of sleep, both overall, and segmentally.

This study is based on the holistic theory of the interrelatedness of all aspects of life, which is consistent with the current ideas emerging from the field of Quantum Physics; one of it's basic assumption being that all of what is seen and experienced as solid matter (including the human body), is on a subatomic level made up of particles and waves within particles and waves, "which eventually turn out

to be just pure energy" (Gawain, 1978, p.5). A basic assumption of holistic thought in this regard, is that thoughts in human beings have their own energy, that in turn can affect the energy that is involved in the varied and interrelated processes governing the human body. Goleman and Gurin (1993), in discussing the emerging field of Psychoneuroimmunology (PNI), which utilizes what they term mind/body techniques that are based on these ideas, note that "evidence is mounting that mind/body techniques may not only improve the quality of life-particularly someone dealing with a serious illness--but actually affect the course of the disease itself" (p. 4).

Overnight shift work can affect and at times disrupt basic biological cycles in humans, such as circadian rhythms (Edelson, 1992). The fact that the aim of mind-body techniques is mental control of body processes, points to the possibility of help for those suffering with SWSD.

Development of the Problem

Sleep deprivation, and its precursor insomnia (defined by Webster as the inability to sleep) can be initiated by shiftwork, "by hindering the biological clock from staying in synchronization with day and night" (Edelson, 1992, p. 30). Those affected may find that their work performance is jeopardized, often with disastrous results. The problems associated with working overnight, with its possible

resultant interruptions in sleep quality and quantity, have been implicated in some fairly recent industrial accidents, such as Three Mile Island, Chernobyl, and the grounding of the Exxon Valdez; all of which occurred in the early hours of the morning. (Fritz, 1993)

On an individual level, a poor quantity or quality of sleep can be the precursor to both mental/emotional and physical problems. "Disturbed sleep can be part of a vicious circle involving emotional and behavioral deterioration" (Research and Education Association, 1982, p. 299). Recent studies have shown that "night workers and rotating shift workers also have three to five times more psychosocial problems, such as finding time for family obligations, performing community service, and other routine activities" (Fritz, 1993, p.72). These realities, and the possible conflicts inherent in them, may further increase the likelihood of mental and emotional problems among overnight workers.

Current treatments for insomnia in general, are varied, ranging from light therapy, in which light ... "serves as a *zeitgeber* (German for "time giver")" in that it "synchronizes the endogenous rhythm", (Carlson, 1992, p. 261), and thus helps to promote more healthy sleep patterns; to the use of chemicals to help regulate and induce sleep.

For overnight shift workers, studies have shown that "a brief course of a short-acting hypnotic can enhance a shift

worker's daytime sleep episode and lead to improved alertness during the waking portion of the sleep-wake cycle" (Thorpy and Yager, 1991, p. 197). The hypnotic drugs most widely prescribed today are the benzodiazapines, which include Valium, Dalmane, Halcion, and Prozac. Fritz (1993) notes the many drawbacks of this form of therapy for sleep problems: loss of effectiveness after two or three weeks; possible negative interactions with alcohol or other drugs; possible continuing dependence on the drug; side effects such as inducing a disturbed sleep, and a "hangover" effect during waking hours. He also notes that after the drugs have been discontinued, that the sleep disorder tends to return, sometimes worse than before. Due to these problems, there is an increase in the use of behavioral treatments for these problems. These behavioral treatments include cognitive focusing using imagery training/visualization, and progressive relaxation exercises.

Hypnotherapy has been shown to induce altered states of consciousness that can be a precursor to sleep (Thorpy and Yager 1991), and its basic principles are an essential ingredient in most stress management programs that are focused on physical relaxation of bodily tensions, which may also increase the quality of sleep (Perl, 1993, pp.177-185).

Aromatherapy relies on the idea that the human body reacts to olfactory signals derived from the essential oils of various plants in various ways (Lavabre, 1990). How the

the body reacts, is not dependent upon the conscious recognition of the smell by the individual, but rather upon its chemical interactions with the brain and nervous system. Since smell is closely related to memory (Lavabre, 1990), a smell that is paired with the sensation of relaxation associated with sleep, could initiate and enhance the behavioral response of sleep, even beyond its own properties capable of causing relaxation.

With these concepts in mind, this researcher was interested in examining the individual and combined effects of these alternative therapies on sleep length in those suffering from insomnia and sleep deprivation derived from SWSD.

The goals of the therapies utilized in this study were to minimize the side effects of SWSD, empower the individual by encouraging self-responsibility, and place the emphasis on the whole person in the utilization of the connection between mind and body.

Need for the Study

It has been estimated that between 5% and 8% of the total population in the U.S. works the night shift (Thorpy and Yager, 1991, p. 196), and that for these people, both insomnia and excessive sleepiness are commonplace, as well as a disturbed sleep/wake pattern. The shorter, disturbed lengths of sleep associated with overnight and shift work

tends to cut down on stage one and two sleep, as well as REM sleep; affecting a worker's performance ability, stress level, and ability to cope with life's demands in general.

Because of today's continuing trend by companies who are in demand of round the clock productivity, variable-shift work and overnight work are likely to become increasingly more common, as will the demand for flexibility in those who work for those companies (Research and Education Association, 1982). A study of both alternative, and safer ways of coping with these demands seems warranted.

For those workers whose bodies and biological rhythms resist adjustment to an altered sleep/wake schedule, and experience the awake-time effects of insomnia such as "fatigue, tiredness, irritability, inability to concentrate, that can impair the ability to work or socialize" (Thorpy and Yager, 1991, p. 105); learning methods of enhancing their sleep that are cost effective, as well as self-empowering and safe, would be of great benefit.

Purpose of the Study

The purpose of this study was to describe the effects that hypnotherapy and aromatherapy have on the length of sleep experienced by those who are living with sleep disruptions or disorders due to their involvement in overnight shift work.

Research Question

What are the effects of hypnotherapy and aromatherapy on the segmental and overall length of sleep in an individual suffering from insomnia due to overnight shift work?

Definition of Terms

Aromatherapy: The use of the essential volatile oils from plants for enhancing the self-healing and regulating abilities of the human body (Lavabre, 1990).

Hypnagogic Hallucinations: Visual images that occur at sleep onset; most typically associated with REM sleep (Thorpy and Yager, 1991).

Hypnosis: A form of self-induced, focused attention that allows for greater ease in relaxation, and promotes a state of increased suggestability (James, 1994).

Hypnotherapy: The process of offering suggestions designed to improve some area of an individual's mental or physical functioning while in an hypnotic state (James, 1994).

Imagery: A mental representation of reality or fantasy ideally encompassing all five modes of perception: visual, auditory, kinesthetic, olfactory, and gustatory; utilized as a communication device between mind and body in some PNI techniques (Fezler, 1989).

Psychoneuroimmunology (PNI): The study of the mind's effect on the immune system in humans, also known as mind/body

medicine (Goleman and Gurin, 1993).

REM Sleep: Sleep in which rapid eye movement can be observed in the sleeper; the stage of sleep in which dreaming occurs (Research and Education Association, 1982).

Stage One Sleep: Light dozing sleep characterized by theta brain waves. Sleeper can be easily awakened (Carlson, 1992).

Stage Two Sleep: Light to medium sleep depth, sleeper can still be easily awakened (Carlson, 1992).

Stage Three Sleep: Deeper sleep characterized by delta brain waves. Sleeper is difficult to wake (Carlson, 1992).

Stage Four Sleep: Similar to Stage Three Sleep, but with an increase in Delta Waves and thus deeper sleep (Carlson, 1992).

Visualization: The process of forming mental images, with the goal of enhancing inner focus and relaxation (Fezler, 1989).

CHAPTER 2

LITERATURE REVIEW

Introduction

The literature review contained in this chapter includes two broad topics related to the conceptual basis of this study. These are: SWSD, including symptoms, consequences, and treatment modalities; and mind-body medicine, including two forms of treatment consistent with its theoretical base, hypnotherapy and aromatherapy.

Shift Work Sleep Disorder

In terms of human history, shift work sleep disorder is a relatively new phenomenon, inadvertently created along with the electric light bulb, which allows for the shift work which is at the heart of the disorder. The symptoms associated with this disorder, however, are not new, including insomnia, and excessive sleepiness during waking hours. along with a disturbed sleep/wake pattern. Thorpy and Yager (1991) note that "Polysomnographic monitoring of the twenty-four hour day confirms the difficulty of maintaining an appropriate sleep duration during the morning after shift-work, and the tendency to sleepiness during the

waking portion of the twenty-four hour cycle" (p. 196). They further cite that this disorder can be classified under the broader heading of "circadian rhythm sleep disorders".

Circadian rhythms. These are patterns of innate biological behaviors that occur daily, based on the twenty-four hour solar day. Perl (1993) notes that "in humans and other mammals, hundreds of physical functions follow daily rhythms. These natural biological patterns are called *circadian rhythms*, from the Latin *circa*, meaning "about," and *dies*, meaning "a day" (p. 191)." Thorpy and Yager (1991) comment that disorders regarding these rhythms can be "...related to an irregularity or disruption of the normal environmental time cues, and are thereby thought to be of socio-environmental cause (p. 46). Other studies place equal emphasis on the internal biological clock found in the brains of mammals, and located in the suprachiasmatic nucleus (SCN) of the hypothalamus. This area is described as a "free running clock" that controls some biological functions such as the sleep/wake cycle, which though usually running in twenty five hour cycles, can be "reset" by means of experiencing light, to the normal twenty four hour cycle (Carlson, 1992). Other "time cues", which may help keep individuals on a twenty four hour sleep-wake cycle, include: alarm clocks, light stimuli, noise stimuli, and social interaction. Since many night-shift workers change back to sleeping at night on their time off, their bodies must try

and re-adjust to a different sleep schedule twice per week. This is similar to what people experience during the phenomenon of jet-lag, which occurs when a person travels rapidly from one time zone to another, thus causing a disruption in the usual timing of the circadian rhythms. Because of the interplay between the internal biological clock, and environmental cues (whether natural or artificial); the disruption of both of these in the overnight shift-worker can create a situation in which the daytime sleep period can be as short as one to four hours, due to the resultant insomnia.

Symptoms. The principal symptom of the disruption of circadian rhythms as is common to those experiencing SWSD, is insomnia. Studies of sleep patterns in night-shift workers show that, "in connection with the night shift most workers reached the criteria for insomnia with respect to sleep length. They also complained of premature awakenings" (Akerstedt et al., 1989, p. 425). Carlson (1992) notes that insomnia is always a symptom related to other problems, and is not a disease or diagnosis in itself. Whatever it's cause, insomnia (also known as "hyposomnia") lessens the duration and/or depth of sleep. Since the overall need for sleep varies with the individual, there is no good objective criterion for calling deviations in the amount of sleep "insomnia". In light of this, insomnia is a subjective problem. One person may sleep eight hours and feel

deprived, while another may feel fine with only five or six hours sleep (Kleitman, 1963). The awake-time effects of insomnia are generally: fatigue, tiredness, irritability, and the inability to concentrate; which can impair the ability to work and socialize (Yager and Thorpy, 1991).

Consequences. Kogi and Thurman (1989), in discussing the consequences faced by night workers in relation to SWSD report that

The main disadvantages of night work relate to the workers' health and family and social life. Generally, only a minority of regular night workers show perfect tolerance to night work throughout their careers. The others develop health and psychological problems after several months or a few years. Surveys show that many night workers suffer from disturbed sleep, gastro-intestinal disorders and other disturbances. On the social side, night work tends to continuously disrupt family life and social activities. (p. 20)

There is evidence that many of these factors impinge upon each other, and lead to a downgrading of both physical and emotional health. Knutsson and Akerstedt (1989) suggest that,

the major disease mechanism is disturbed circadian rhythmicity which leads to stress. The stress reaction is responsible for complaints, lowering of well-being and probably adverse health effects. The intervening variables are housing standards, sleeping conditions, the family situation, personality, and psychological adaptability. (p. 380)

They suggest that disturbed circadian rhythms are not in themselves directly causative of disease, but can be a link in the chain of events that lead to both gastro-intestinal and cardiovascular disease. Knutsson and Akerstedt (1994) also concur with evidence presented by

Reinberg in 1984, that "workers who had medical and social problems as a result of shift working tended to show internal desynchronization between their body temperature rhythm and sleep/wake cycle (p. 381), and that workers that were able to adjust successfully to shift work did not show evidence of internal desynchronization.

Treatment modalities. The most common ways of dealing with the problem of SWSD, are by means of good sleep hygiene (Thorpy and Yager, 1991). An environment that is conducive to sleep is a main ingredient in good sleep hygiene and includes the elimination of daytime noise and light, as well as a restful room temperature (sixty four to seventy degrees works for most people). Another basic of good sleep hygiene, is that of keeping the same sleep schedule on days-off, as on work days. Although this is the case, most overnight shift workers switch to night sleeping during their time off.

Cognitive/behavioral methods for working with SWSD and its resultant insomnia are being shown to be effective in lessening the symptoms involved. Morin and Azrin (1987) compared two treatments from among these methods; stimulus control, and imagery training. The stimulus control treatment consisted of a set of instructions designed to curtail sleep-incompatible behaviors and to regulate the wake-sleep schedule. The subjects involved in the imagery training treatment were taught via standardized instructions to

imagine (visualize) a sequence of six neutral objects and to focus attention on their purely descriptive properties. Both of these therapies were aimed at increasing sleep-maintenance with the goal of reducing the duration of nocturnal awakenings. Both methods yielded positive results in lessening the amount of time spent awake during these awakenings. The stimulus control group showed more immediate and noticeable change (from 55 minutes awake time to approximately 20 minutes on average). The imagery training group's improvement was much less dramatic (from 53 minutes down to around 45); but at the 12 month follow-up, both groups had stabilized at around 30 minutes.

Other behavioral techniques are common to those working with sleep disorders, such as relaxation training. Indeed, Masters, Burish, Hollon, and Rimm (1987) note that these are "in many ways the backbone of behavior therapy" (p. 36). They also mention how that much of what is currently in use derives from the work of Edmund Jacobson in the 1930's, in which he developed what he termed "progressive relaxation". This was accomplished by alternatively tensing and relaxing particular muscle groups, with the overall goal of bringing about a deep state of muscle relaxation. Although this was primarily designed for work with clients with anxiety problems, it is being found as helpful to those with sleep disorders as well. Woolfork and McNulty (1983) compared several therapies, including: imagery training, imagery

training with muscle tension-release, progressive relaxation without muscle tension-release, and progressive relaxation, with each other and a control group. They report that the results "substantiate the effectiveness of various forms of relaxation training in the treatment of sleep onset insomnia" (Woolfork and McNulty, 1983, p. 501). Autogenic training and meditation, more passive techniques that are based on this same principle, are also widely incorporated into behavioral therapies and research (Masters et al., 1987).

Beyond these cognitive behavioral approaches, are the use of drugs to aid in working with insomnia. Regardless of the particular type of sleep medication, use of them on any kind of regular basis will likely prove to be self-defeating. Carlson (1992) notes that,

Ironically, the most important cause of insomnia seems to be sleeping medication. Insomnia is not a disease that can be corrected with a medicine, in the way that diabetes can be treated with insulin. If it is caused by pain or discomfort, the physical ailment that leads to the sleeplessness should be treated. If it is secondary to personal problems or psychological disorders, these problems should be dealt with directly. (p. 256)

He also notes the problems related to increasing body tolerance to the drug on the part of the user, requiring an increased dosage, and ultimately leading to a "withdrawal effect" (a severe disturbance in sleep) when the drug is decreased or discontinued. Another serious concern is that these medications are generally dispensed based on patient report, which has often proved to be inaccurate as to the

actual amount of sleep they experience. Carlson (1992) notes that "studies on the sleep of people who complain of insomnia show that most of them grossly underestimate the amount of time they actually sleep" (p. 256). This situation is further exacerbated by the phenomenon of "imaginary insomnia", in which the insomniac dreams that s/he is still awake. This situation has been verified in sleep studies, in which EEG patterns showed the patient to be asleep, and upon awakening reported having been awake (Research and Education Association, 1982).

Barbituates, hypnotic agents which have been in use since around the turn of the century, began to fall out of favor and use as sleep aids in the 1960s. This was mainly due to their potential for drug addiction, overdose resulting in death, and side effects. One of these side effects is a decrease in the amount of both slow wave and REM sleep, and hence the overall quality of sleep. Other side effects include, "...the sedative effects, which may impair performance for up to 24 hours after their administration; excitement, with an intoxicated or euphoric feeling; and irritability and temper changes" (Thorpy and Yager, 1991, p. 27). Lamberg (1988) remarks that,

According to the AMA, barbituates remain one of the leading causes of fatal drug poisoning, many cases of which are suicides. When taken in conjunction with alcohol, the danger is increased. Barbituates may also interact adversely with many other drugs, including those used to treat depression and pain. In addition barbituates have a high addictive potential. If a person dependent upon barbituates stops using the drug,

he or she may suffer such unpleasant withdrawal symptoms as tremors, convulsions, and hallucinations. (p. 66)

More commonly used today are sleeping pills that are members of the chemical family known as the benzodiazepines; of which Lamberg (1988) estimates at two thirds of the sleeping pills prescribed in the United States. The most widely known of this family of tranquilizers is diazepam (Valium). These medications work in conjunction with the inhibitory neuro-transmitter gamma-aminobutyric acid (GABA) which appears to be widely distributed throughout the gray matter of the brain and spinal cord (Carlson, 1992). This substance allows for the overall stability of the brain. Carlson (1992) further notes that without GABA

...excitatory synapses neurons would excite their neighbors, which would then excite their neighbors, which would then excite the originally active neurons, and so on, until the whole brain would be firing uncontrollably. In fact, this event does sometimes occur, and we refer to it as a seizure. If an inhibitory substance is supplied, the presence of such a large number of GABA-secreting neurons keep seizures from occurring. (p. 115)

In regards to sleep, the inhibitory response resulting from the enhancement of the normal action of GABA allows for general relaxation, and thus helps in the inducement of sleep. "The three major benzodiazepine hypnotic agents currently in use in the United States comprise the long-acting flurazepam (Dalmane), the intermediate-acting temazepam (Restoril), and the short-acting triazolam (Halcion)" (Thorpy and Yager, 1991, p. 31). They further

report that with the use of these medications, the amount of stage one, three, and four sleep is reduced; as well as the amount of REM sleep. This reduction of REM sleep can produce what is termed "REM rebound", when the medication is discontinued. This rebound is characterized by "an increase in awareness of having had long and complex dreams. Occasionally nightmare activity may be exacerbated by the REM rebound" (Thorpy and Yager, 1991, p. 185). Lamberg (1988) cites a study in which benzodiazepine use has been reported to have a persistent effect on memory beyond their effect on sleep. In this double-blind experiment, one group used placebos, and the other benzodiazepines at bedtime. The next day they were asked to listen to and remember a list of words; at which time they all remembered them satisfactorily. At follow-up times of 8 and 24 hours later, the benzodiazepine users remembered fewer words, with some of them forgetting ever having heard the list. Thorpy and Yager (1991) note the untoward effects of benzodiazepines as

...light-headedness, fatigue, reduced reaction time, motor incoordination, ataxia and impaired mental and psychomotor function. There can be confusion, dysarthria, retrograde amnesia, dry mouth and a bitter taste. Benzodiazepines may interact with alcohol to produce more severe sedation and this effect of the benzodiazepines may be more prominent in the elderly. (p. 32)

There is a wide variety of other medications (over the counter and otherwise) that are not mentioned here due to general ineffectiveness and/or side effects (i.e. antihist-

amines, anticonvulsants, analgesics, antidepressants, etc...).

Mind-Body Medicine

At its core, the concept of mind-body medicine is nothing more than the knowledge that the mind (including the way, as well as what we think) can and does affect the human body, both positively and negatively. Although this approach to health is fairly recent in the sense of its being common knowledge, it is far from being a new phenomenon. Goleman and Gurin (1993) note that

relaxation, hypnosis, and other mind/body approaches have been used in Western medicine for decades, even centuries, and very possibly for millennia by traditional healers...things are different today... the use of these approaches is becoming more widespread and they are gaining more respect and interest from researchers in major medical institutions. (pp. 3-4)

This more recent attraction found in the traditional medical field, had its beginnings in various behaviorally based experiments, most of which were not intended for this purpose. Goleman and Gurin (1993) cite an example of this in Robert Ader's 1974 discovery of the link between the central nervous system and the (previously thought independent) immune system. Ader had been conducting a classic Pavlovian style conditioning experiment on rats, trying to produce aversion to saccharin-laced water by injecting them with cyclophosphamide (which produces nausea) after they had tasted the treated water. When many of the

rats began dying prematurely, he discovered that the cyclophosphamide was also responsible for weakening the rats' immune system. He discovered that it lowered the number of "T" cells (immune system cells that fight viruses and infections in the body) in the rats bloodstream. He noted that the rats that had been conditioned to react negatively to the saccharin water, also began to show increasingly lowered T cell counts whenever they tasted the treated water; even in the absence of the cyclophosphamide. The rats' immune systems had learned by association to react negatively to a neutral stimulus. These experiments have subsequently been successfully repeated. (Goleman and Gurin, 1993, pp. 6-7) Pelletier (1993) reports that

There is now a great deal of evidence for direct connections between the central nervous system and the immune system-parts of the body that had long been thought to be independent. Nerve endings have been found in the organs and systems of the immune system-the thymus, lymph nodes, spleen, and bone marrow-and immune system cells respond directly to chemical signals produced by the nervous system and released into the bloodstream. (p. 21)

One of mind-body medicine's prime functions is that of helping to nullify the effects of stressors on a person, so that s/he are not having to continually experience high levels of stress. Since the parasympathetic nervous system in humans is designed to induce relaxation and compensate for times of increased arousal (reaction to stressors), mind-body techniques are designed to enhance its functioning in areas such as lowering heart rate, muscle tension, and

blood pressure. Pelletier (1993) further notes that "All stress management techniques, from meditation to biofeedback aim to induce a positive parasympathetic state" and that the goal is not only to "help people withstand short-lived stressful events, but to defuse the effects of chronic stress-a more serious threat because chronic stress may not give the body the respite it needs to recover" (1993, p. 25). Germane to this thesis, he cites sleep deprivation as one of the many stressors that can affect the body in negative ways.

Hypnotherapy

Despite the somewhat dramatic light in which it has often been portrayed, hypnosis has mainly to do with attention and awareness. James (1994) describes this process in which "the client is simply learning to suspend the logical, analytical, feeling/emotional, critical judgement which the left brain is in charge of" (p. 7). This suspension occurs as the hypnotherapist helps the client to relax, and then to engage his/her mind in a focused, inward way. Fezler (1989) notes that the client begins by "learning to clear his/her mind, and remove all negativity" (pp. 4-5). He further defines hypnosis a state of increased concentration that helps the client achieve this clearing. Olness (1993) concurs, reporting that hypnosis is "...simply a form of self induced, focused

attention that can make it easier for you to relax or to learn to control your body's functions" (p. 278), and expands upon this basic idea, commenting that:

people are usually led into hypnosis--a process called hypnotic induction--simply by listening to a voice giving them suggestions that help them become more and more deeply relaxed and focus their attention. You can enter a hypnotic state either by listening to a professional hypnotherapist or by listening to instructions on a tape. If you learn hypnosis to deal with a specific problem...you will need practice entering this state on your own... In addition, you will learn to use that state to give yourself specific suggestions to help you meet your goal. (p. 278)

Since hypnosis requires the active mental participation of the client in the process of visualization, hypnosis could be accurately defined as self-hypnosis. In discussing his role as a hypnotherapist, Fezler (1989) notes that "all hypnosis is really self hypnosis. I only serve as your instructor or director, telling you what to do to access this state of mind. Once you learn the technique, you can do it on your own" (p. 5).

The key to the "therapy" portion of the term hypnotherapy, is partly found in the theory that once the client is in a deeply relaxed state of concentration, s/he is functioning more on the right side of his/her brain, and is therefore more open to the pre-planned therapeutic suggestions for possible change in thought, behavior and emotion. James (1994) notes that "the right contains no judgement, rationality, emotions; it accepts all information as fact and as truth" (p. 7).

An important part of the therapeutic intervention involved in hypnotherapy is visualization-creating inner images consistent with the goal of the therapy. Fezler (1989) comments that one can conquer his/her day to day outer reality, when s/he learns to master the inner reality through positive imaging and visualization. This conquering of the person's outer reality can take the form of an enhanced emotional freedom that can allow for more freedom of action: or (as in mind/body medicine), it can actually translate into positive physical changes within the body through what has been termed as the "bodymind connection".

The types of showers and sparks that reverberate throughout your electrochemical self reflect the nature of the image. If you have sad images, you manufacture the chemicals of depression. If you have aggressive images, you make adrenaline, the hormone of "flight or fight." Images that cause people to feel relaxed have produced a natural tranquilizer that has a chemical structure like Valium. If a person is given a placebo and told it is a painkiller, that person's body can manufacture an actual painkilling hormone that is very much like morphine. Images that make you feel jubilant can trigger the activities of neuropeptides, which in turn can positively affect the activities of the immune system. The brain can be a powerful regulator-and reflector-of what we feel. (Achterberg, Dossey, & Kolkmeier, 1994, pp. 53-54)

Rossman (1993) makes a distinction between hypnosis and visualization/imagery, while maintaining the idea of their complementary natures and notes that:

In hypnotherapy, specific suggestions are used to relieve physical symptoms, and imagery is generally the most powerful and effective way to provide such suggestions. Rather than simply saying "Your pain is diminishing," for example, a hypnotist may ask you to imagine a painful part of your body feeling warm or going numb. (Imagery itself can also be used to induce

a hypnotic state in the first place). (pp. 293-294)

An important final discussion regarding hypnosis and hypnotherapy as it relates to the topic of SWSD is its effect upon human brain wave patterns. These wave patterns are measured in cycles per second (CPS). James (1994) notes that

Hypnosis has to do with brain wave patterns: Beta, Alpha, Theta, and Delta. The brain produces about ten watts of electrical current which produce a total energy spectrum of 0 to 40 cycles per second...hypnosis is the Theta state (4-7 C.P.S.). We all experience hypnosis daily: Ultradian rhythms during Beta (14-33 C.P.S., or full waking state and alertness) occur every 90 to 100 minutes for 15 to 20 minutes in which our brain slides into Theta and makes an unconscious demand to relax, slow down, go to the bathroom, have something to eat or drink, etc. This Ultradian rhythm directly coincides with the nighttime sleep patterns of REM (rapid eye movement denoting the imagery or dream state)...it is the hypnotherapist's responsibility to move a client from Beta to Alpha (8-12 C.P.S.) to Theta (deep hypnotic state)...in order to implant positive suggestion for change in thinking, feeling, and behaving for a healthier lifestyle. (1994, pp. 7-8)

Aromatherapy

Aromatherapy has been included here as (at the very least) an adjunct to other holistic or mind/body techniques such as hypnotherapy; although there is not widespread agreement on this point. Wilson (1995) gives a basic description of this practice as follows:

Aromatherapy is the practice of using naturally distilled essences of plants to promote the health and well-being of your body, mind, and emotions. These essences, called essential oils, can restore balance and harmony to your body and to your life. (p. 3)

The history of using plants as medicine has been dated

as far back as 18,000 B.C., with the earliest written text, the Pen Tsao, coming out of China between 1,000 and 700 B.C. (Ryman, 1991). The advent of the nineteenth century and the scientific method marked the ebbing of the use of plants and herbs as medicine. In this regard, Lavabre (1990) comments that

The early scientists had a simplistic and somewhat naive vision of the world. When the first alkaloids were discovered, scientists thought it better to keep only the main active principles of the plants, to reproduce them in laboratories. Thus they discovered penicillin (from a natural mold growing on bread), aspirin (naturally present in birch, wintergreen, and meadowsweet), antibiotics, and so on. (p. 5)

History and current trends Aromatherapy as its practiced today owes it's existence mainly to the French chemist Dr. Rene-Maurice Gattefosse (Fischer-Rizzi, 1990). The term, aromatherapy is a term that he coined which later served as the title of his 1937 book on the subject. Another person essential to the progress of aromatherapy in this century is the French physician Dr. Jean Valnet. He had read, and was impressed with Gattefosse's book. Fischer-Rizzi (1990) notes that Valnet "used essential oils in the treatment of war injuries during World War II to disinfect and heal" (p. 11). She further comments that two of Valnet's students were instrumental in taking aromatherapy to England and the Royal Family; and that England currently has many professional aromatherapists, as well as schools and clinics dedicated to it. Lavabre (1990) reports a similar acceptance in France, where "aromatherapy

is practiced by medical doctors, and essential oils can be found in any health food store and most pharmacies", and that "their purchase is reimbursed by French health insurance (p.5). On the other end of the spectrum are those who place little (if any) faith in any of aromatherapy's claims. Butler's (1992) comments reflect this view

Aromatherapy is a semiautonomous branch of herbalism that uses aromatic oils from roots, flowers, barks, leaves, and resins. The treatments are alleged to prevent and cure scores of ailments...There is no evidence whatsoever to support these claims...although it is hard to believe that anyone is foolish enough to believe that aromatherapy is effective against serious disorders, the therapy is surely harmless in itself. No doubt it also has the placebo power with its "therapists" rituals", and strong aromas, so it might afford pain relief in some cases. However it should not be used instead of proper medical care. (p.155)

Some proponents of holistically based mind/body techniques also question the validity of aromatherapy as a viable method of treatment. Goleman and Gurin's (1993) remark in defense of mind/body approaches simultaneously places aromatherapy outside of their camp. They explain that while

some entrepreneurs and journalists have overinterpreted the meaning of mind/body medicine, others have not taken this growing field seriously enough. The media have tended to treat it as a "New Age" phenomenon more than as a serious scientific undertaking. Recent cover stories on alternative medicine in national magazines have treated relaxation, biofeedback, and hypnotherapy-mainstream mind/body approaches-together with homeopathy, aromatherapy, and crystal healing, which have nothing to do with mind/body medicine. (p.xii)

Practitioners and users of aromatherapy point out that there are beneficial physical effects beyond the assumed placebo effect. Kastner and Burroughs (1993) note some specific

effects, such as "...chamomile acts as an anti-inflammatory, peppermint as a stimulant, lavender as sedative, and thyme as an antiseptic" (p. 20). Kastner and Burroughs (1993) further comment that because of their molecular structure, essential oils easily penetrate the skin; noting that German research shows that once the oils have entered the bloodstream, they can consequently be measured in the exhaled breath after having done their therapeutic job. Fischer-Rizzi (1990) likewise remarks on early scientific testing of essential oils:

Between 1920 and 1930 Italian scientists conducted experiments dealing with the psychological effects of essential oils. An article published in 1922 by Dr. Reynato Cayola and Dr. Giovanni Garri discussed the effects of essential oils on the nervous system. Both scientists had studied their stimulating as well as calming effects, measuring blood pressure, breathing frequency, and blood circulation rate. They also observed the bacteria-destroying properties of essential oils. (p. 11)

Lavabre (1990) cites more recent evidence in the work of Dr. Maurice Girault a French gynecologist/obstetrician who has studied the effects of essential oils in gynecology for over twenty years. In his tests, vaginal secretions are tested against several essential oils in order to ascertain which are most effective against any particular microorganism. Lavabre (1990) also makes mention that "this method has been extended to all infectious disease by French aromatherapy doctors Pradal, Belaiche, Andoui, and Durrafour. It has the advantage of dealing with real germs coming from real sites in real patients, rather than from laboratories", and that

"...analyzing the germicidal power of essential oils have given scientific validation to aromatherapy" (p. 7).

Theory of operation The essential oils used in aromatherapy are derived from plants by various methods of extraction, the most common being steam distillation (Kastner and Burroughs, 1993). According to Lavabre, (1990) these

oils are present in tiny droplets between the cells, where they act as hormones, regulators, ant catalysts. They appear to aid the plant in adapting to its environment and thus increase their yield in situations that are stressful to the plant. In extreme climates, such as the Arabian desert, certain plants use essential oils as a protection against the sun. Myrrh and frankincense bushes are surrounded by a very thin cloud of essential oils, which filters the sun's rays and freshens the air around the bushes. (p. 16)

In human beings, these essential oils have been shown to work on several different levels, one of the most common being the sense of smell. Wilson (1995) remarks on this process of olfaction, noting that it begins with the approximately ten million olfactory receptors located in each nostril. It requires as little as eight odor molecules to activate the sense of smell, and around forty odor molecules for smell recognition in a human. Once these receptors identify a particular smell, the information is passed via nerve cells to the limbic system of the brain (also known as the "smell brain"), even prior to the arrival of the molecules themselves. Lavabre, (1990) comments

that the limbic system is the part of the brain that regulates the sensorimotor activity and deals with the primitive drives of sex, hunger, and thirst.

Stimulation of the olfactory bulb sends electrical signals to the area of the limbic system concerned with visceral and behavioral mechanisms...In fact, the brain's electrical response to odors is about the same as the one correlated with emotions. (In the French language the same verb, *sentir*, is used for "to smell" and "to feel."). (p.11)

Lavabre (1990) also notes that most of our olfactory reception happens mostly at an unconscious level, and that we become "blind" to new environmental odors after experiencing them for a short time, even though the electrical signals correlated to the odor continue to reach the brain. It is in the deep brain structures of the limbic system that odors can trigger memories and influence behavior. Wilson (1995) notes in this regard that the limbic system works in coordination

with the pituitary gland and the hypothalamus area of the brain to regulate the hormonal activities of the endocrine system. Odors can thus trigger the production of hormones that govern appetite, body temperature, insulin production, overall metabolism, stress levels, sex drive, and conscious thoughts and reactions. The limbic system affects the nervous system as well. Desires, motivation, moods, intuition, and creativity all originate within the limbic system. Because they act on the limbic system, smells can make you feel better psychologically in addition to enhancing your physical health. Research shows that people who surround themselves with pleasant scents enjoy higher self-esteem. Smells initiate both physical and psychological reactions by stimulating the release of neurotransmitters and endorphins in your brain. These hormonelike chemicals produce gratifying sensations, even feelings of euphoria, and generate an overall sense of well-being. (p. 16)

Summary

SWSD has been shown to be at the root of many physical,

emotional and social problems. Conventional means of treatment, such as sleeping medication, while initially effective, have been known to actually aggravate the insomnia resulting from SWSD. In addition, sleeping medicines have the potential for producing other negative side effects, including addiction and withdrawal.

Relaxation techniques based on the ideas of mind/body medicine have been shown to enhance the process of falling and staying asleep. Among these techniques, hypnotherapy in particular has shown itself conducive to a relaxed state of mind and body. This relaxed state allows for increased suggestability toward positive change in many life areas, including sleep.

Aromatherapy, while dismissed by some in the United States as "new age hype", has been accepted and utilized with good results in Europe; particularly in France. Practitioners of Aromatherapy report that the essential oils they use have physical effects upon the human body beyond a placebo effect.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this study was to describe the effects that hypnotherapy and aromatherapy have on the length of sleep experienced by those who are living with sleep disruptions or disorders due to their involvement in overnight shift work. The study may help to determine whether it is possible to increase the segmental and overall length of sleep in these individuals.

Research Design

This study is based on data derived from observations of one individual, in a one group, pre-test/post-test design. Due to the absence of either a random sample, or a control group, this study is considered quasi-experimental and therefore lacks many of the usual controls upon variables that are included in a true experimental design. The quasi-experimental design does however share the positivist view of the experimental design, which holds that scientific knowledge is made up of facts that may be organized under general laws. Also that scientific knowledge can be gained through the senses and observations when combined with logic (Merriam and Simpson, 1984). The

control that was exercised in this study was obtained through the individual participant. Merriam and Simpson (1984) note, that "by subjecting the same individual to two or more experimental treatments intended to reach similar ends, the researcher has some assurance that extraneous variables have been limited" (p. 55).

The design for this study was chosen based on the researcher's knowledge of the subject's experience (over a one year time span) of insomnia and partial sleep deprivation due to SWSD, and the accompanying psychosocial stressors. During that time, the subject's symptoms remained stable, including a three week pre-test period, in which no significant change in sleep quantity was noted.

For a twelve week period, the overall quantity of sleep (based on segmental and overall length of each sleep period), was examined.

Source of the Data

The subject involved in this study is a forty one year old Caucasian male, currently employed as a respiratory therapist, who has worked the overnight shift for approximately ten years. The shifts worked are usually twelve hours long, and the subject works four of these per week, with breaks in the middle of the week. The subject had been married fourteen years prior to being divorced approximately one year ago. Subject has two children, both

boys, one pre-teen, and one teenager. Psychosocial and marital problems (exacerbated by overnight shift-work) are cited by the subject as some of the primary reasons for the divorce.

Since the divorce, the subject's already disrupted sleep time had decreased in the overall length of time spent asleep, as well as an increase in the number of awakenings during the overall sleep period. Subject has also noted periodic terrifying hypnagogic hallucinations, occurring within three to five minutes of sleep onset.

The subject's personal evaluation of his mental and physical status is that he has not noted significant personal progress in moving past the grief of the unwanted (on his part) divorce; and that he rarely if ever experiences a satisfying amount of sleep in which he awakes feeling energized. Subject initially and temporarily utilized prescription sleeping pills for this, but discontinued their use due to grogginess during his waking periods, and fear of becoming dependent on them. The subject reported that he has no problem falling asleep, but that he had difficulty staying asleep. He also noted that when he did wake up, he would usually go back to sleep within five to ten minutes; but would continue to have interruptions throughout the sleep period.

Subject is a moderate coffee drinker (one-two cups per work shift), and uses alcohol sparingly and intermittently

(three to five drinks per week).

Subject's physical health is fair to good, with the exception of an episodic, moderately severe lower back problem, which when causing pain, makes the inclination to wake up at night more likely. This was not reported by the subject as being a problem during the twelve week test period.

Subject was chosen based on past therapeutic interactions and interventions by the researcher in the process of both couple and individual therapy.

The subject was representative of those in the health care field, by virtue of the overnight shift work that is often required; and because studies show that between forty to eighty percent of shift-workers suffer from insomnia (Fritz, 1993), with it's accompanying negative effect on health, and mental/emotional functioning.

Assumptions and Limitations

Assumptions. One assumption was that the subject is typical of other adults who suffer symptoms related to sleep interruption deriving from SWSD. A further assumption was that the subject's pre-test and post-test self-reports were honest and correct to the best of his knowledge. It was further assumed that the subject's symptoms were derived from SWSD, and that other physiologically based sleep disorders had not been identified in the subject, and were

therefore ruled out.

Limitations. Limitations to the study include the fact that the study was not performed on a large random sample of subjects, and therefore may or may not be generalizable to a broad population. Another limitation was the lack of control on daily life events (including food, drink, and possible chemical consumption) that may have affected the subject's ability to sleep soundly on any given day. A further limitation was that the results may or may not be applicable to the general population, based on any given individual's responsiveness in allowing the altered states of consciousness associated with hypnotherapy.

Procedures and Instrumentation

The pre-test procedure included a daily record by the subject, over an approximately three week period (twenty four days), in which he recorded the length of each segment of sleep during the entire sleep period. This was recorded on a pre-printed tally sheet (developed by the researcher) that divided each hour into fifteen minute segments, which the subject kept next to his bed (see Appendix A for instrument).

Upon awakening, the subject check-marked the closest fifteen minute mark each time the subject awoke throughout each entire sleep period. This system allowed for minimum disruption of the subject's return to sleep; although some

initial mild anxiety was reported during the first week, as the subject was becoming accustomed to the system. Prior to the first three week period, the methodology and purpose of the study were discussed and agreed upon verbally, after which the subject's signed consent was obtained.

Following the pre-test was a three week period of time in which the subject continued recording his quantity of sleep as before. During this time, the subject received one hypnotherapy session per week, lasting for one to one and a half hours. This session included fifteen to thirty minutes to discuss the subject's sleep patterns and reactions from the prior week, after which the subject participated in the hypnotherapy session designed to allow him to experience longer periods of sleep. The subject was consequently instructed to, and reportedly did, listen to a recorded version of the hypnotherapy script each time he laid down to sleep. The hypnotherapy script that was utilized during this period was written by the researcher under the guidance of a certified hypnotherapist (see Appendix B).

The next three week period included hypnotherapy, performed in the same manner as the preceding period. The one difference was that aromatherapy was combined with it. The subject continued to record sleep times as before. The aromatherapy treatment was accomplished by spraying a mixture of the essential oils of lavender, tangerine, and ylang ylang in the general vicinity of the subject, allowing

him to breathe in the mist during the relaxation stage of the in-vivo hypnotherapy session. The subject was subsequently instructed to spray a small amount of the mixture on to his pillow before laying down to sleep each time.

The final three week period included the subject's continued self-treatment with aromatherapy, following the same instructions as in the previous three week period, while discontinuing all forms of hypnotherapy.

Method of Analysis

The information gathered in the pre-test portion of the study was computed for the average amount of time spent between times of awakening during the overall daily sleep period, along with the total average amount of sleep for the same period; and then compared to the averages derived from the following three periods of three weeks in which treatments were applied to the subject. The results were subsequently examined for differences in the amounts of sleep, and wake up times.

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

This study was based on the research question of whether it was possible to increase the overall and segmental length of sleep in persons suffering from insomnia due to Shift Work Sleep Disorder by utilizing hypnotherapy and aromatherapy.

This quasi-experimental, one group pre-test/post-test design was broken into four, three-week segments. During these time periods, data was collected in four discrete areas consistent with measurement of the overall and segmental length of sleep in the test subject. Because the subject reported having particular difficulty staying asleep for any useful length of time during his first sleep segment, the first area studied was the mean amount of sleep that the subject reported during this first segment. This area is labeled below as F.S.S.T (first segment sleep time). The second area studied was the mean amount of sleep experienced by the subject between times of awakening; this is labeled below as M.S.S.T. (mean segment sleep time). The next area looked at was the mean overall sleep time for each of the subject's sleep episodes studied; this is shown as O.T.S.T. (overall total sleep time). The final area studied

was the mean number of awakenings during each of the three-week periods; this is shown below as N.O.A. (number of awakenings).

Treatment given during the four, three-week periods are as follows:

First time period (TP-1)-no treatment (pre-test).

Second time period (TP-2)-hypnotherapy only.

Third time period (TP-3)-hypnotherapy and aromatherapy combined.

Fourth time period (TP-4)-aromatherapy only.

Findings

Table 1

Comparison of Sleep Time Results

	<u>F.S.S.T.</u>	<u>M.S.S.T.</u>	<u>O.T.S.T.</u>	<u>N.O.A.</u>
<u>TP-1</u>	52 min.	62 min.	413 min.	6
<u>TP-2</u>	120 min.	91 min.	498 min.	6
<u>TP-3</u>	171 min.	99 min.	403 min.	4
<u>TP-4</u>	154 min.	109 min.	376 min.	3

The subject's mean initial sleep segment was increased

by approximately 131% using hypnotherapy alone, and was increased by an additional 51 minutes when hypnotherapy and aromatherapy were used in tandem. One area that didn't yield the expected results was that of aromatherapy alone, in which the mean initial sleep segment showed a decrease of 17 minutes from time period 3. Still, this final result showed a mean increase of 102 minutes over the non-treatment period (TP-1). The mean length of sleep between awakenings showed similar results; the main difference being that aromatherapy alone yielded a longer mean sleep segment time than both hypnotherapy and the combined treatments of hypnotherapy and aromatherapy; the final result being 47 minutes longer than the non-treatment period. The same was true of the mean number of awakenings per night, which was 4 times per night during the combined therapies, and dropped to 3 times per night with aromatherapy alone; half as many times as the pre-test number of 6 times per night. The finding that didn't conform to this general pattern, was the total mean amount of sleep the subject experienced during each discrete episode of sleep. This initially rose from the pre-test mean of 413 minutes, to 498 minutes during the hypnotherapy alone period of the study. This figure dropped to 403 minutes during the period of combined therapies, and continued to drop; reaching a mean of 376 minutes during the aromatherapy treatment alone period.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study described the effects that holistically based treatments can have on decreasing the effects of insomnia on those subject to Shift Work Sleep Disorder by virtue of overnight and rotating shift work. The treatments utilized were hypnotherapy, which was later combined with aromatherapy; and concluded with aromatherapy alone. Based on a review of the literature, which included books by prominent authors in the field of mind/body medicine and aromatherapy as well as experimental data by researchers in the field of sleep disorders; it was expected that these methods would result in an increase in both the segmental and overall length of sleep. It was further expected that the number of awakenings would decrease as a result of these treatments.

Another expectation was that the combined treatments of hypnotherapy and aromatherapy would result in an increase in sleep surpassing that of hypnotherapy alone; and that aromatherapy utilized alone after the combined therapies would yield similar results based on the findings of classical conditioning. The overall results were that the initial and subsequent sleep segments were increased by 196%

and 76% respectively. The number of awakenings were reduced by 50%, and the overall total sleep time showed a reduction of 10%.

Conclusions

In light of these findings, it appears that the relaxation response and suggestions for longer sleep periods from the hypnotherapeutic treatment was successful in lengthening both the initial and subsequent sleep segments, as well as lessening the number of awakenings; and that these responses were heightened by the addition of aromatherapy. Also, that the subsequent final treatment utilizing aromatherapy alone held the segmental sleep increases steady; with an 11% decrease in first segment sleep time, and a 10% increase in overall segment sleep time, compared to the hypnotherapy and aromatherapy treatment together.

This study appears to confirm the growing body of information and studies in the area of mind/body medicine; and offers alternative treatments that are more consistent with the general trend toward self-empowerment. It also points toward the encouragement of combining these types of therapies in the interest of being able to set aside, to some degree, traditional therapies that while mostly consistent in their application, contain realities such as side-effects and higher price tags; and that can foster

dependent attitudes and behavior. Of the treatments utilized here, hypnotherapy (including such aspects as visualization and relaxation) appears to confirm positive research in the area of sleep disorders; while aromatherapy with it's general scarcity of experimental literature (beyond a few comprehensive books on the subject) is still somewhat on trial. Morin and Azrin's (1987) study using visualization and stimulus control yielded results similar to this study in the area of increasing sleep maintenance. Woolfork and McNulty's (1983) substantiation of the effectiveness of the various forms of relaxation training (combined with imagery training) in the treatment of sleep onset insomnia, also points in the same direction of this study. The connection of mind and body in the reduction of stress, that can allow for increased sleep due to muscle relaxation and a clearing of the mind as cited by Pelletier (1993), and Oleness (1993) further appears to be confirmed by this study; as is the general idea of pairing in the ideas of classical conditioning.

The fact that the subject was experiencing emotional stress from painful anniversary dates around his recent divorce, which lowered his sleep time during those days; and yet showed a mean increase in his sleep time overall, seems to lend credence to the effectiveness of these combined treatments. This personal stress experienced by the subject was made very evident in sudden decreases in sleep during

weeks containing important anniversary dates. For example, on the subject's ex-wife's birthday, he woke up 14 times; while during the days before and after this date, his maximum number of wake-ups was nine. The mean sleep time could very well have been higher had this not been the case.

As regards the subject's overall total sleep time; which showed a 2.5% decrease from the pre-test period during time period 3 when hypnotherapy and aromatherapy were utilized in tandem, and a 9.8% decrease during time period 4 which utilized aromatherapy alone; the following conclusion seems likely. Since the subject was sleeping far longer on a segmental basis (and thus experiencing less sleep disruptions overall); it appears likely that the subject required less overall sleep time. This is confirmed by the subject's self report of increasing satisfaction with each ensuing method of therapy. It seems that the initial 20.5% increase in overall total sleep time, during time period 2 which utilized hypnotherapy alone, can be accounted for by the reality of the subject's prior deprivation. It would appear that the subject was catching up on much needed sleep with the aid of the hypnotherapy treatment, and that his overall need for sleep decreased as the therapy became more successful in terms of longer segmental sleep. The 11% decrease experienced by the subject during first segment sleep time when utilizing aromatherapy alone (as opposed to hypnotherapy and aromatherapy combined) seems to relate to

the fact that more of the "negative anniversaries" fell during this treatment period. This decrease also seems to be counterbalanced by the 10% increase in overall segment sleep time during time period 4.

Recommendations

SWSD warrants further research utilizing a larger sample, with more control over extraneous variables. Problems such as the lack of control on the subject's actual sleep environment (i.e. control of lighting by blacking out windows; control of extraneous noise by utilizing neutral "white noise", and control of room temperature for maximum subject comfort) could have affected the results.

Another area that calls for revision, was the method of recording the subject's wake times. The act of sitting up and recording the disruption may very well have added to the subject's insomnia. A system of marking the wake-up times by a simple means such as pushing a button would be preferable. In order to overcome the lack of environmental control and the mechanical problems associated with recording wake times, a laboratory sleep study seems warranted.

The results of this study point strongly to the viability of using self-empowering, and holistic methods of dealing with sleep and circadian rhythm disorders deriving from the twentieth century reality of overnight shift-work;

a reality not likely to change in the near future. The implications for counselors and those in other helping professions seem clear: an eclectic approach that leads to increased self-sufficiency and responsibility, while providing relief that is both cost-effective and essentially free of negative side effects is called for. This study implies that counselors in particular can utilize these techniques as a first recourse for persons suffering from SWSD; and points to the apparent viability involved in utilizing multiple therapies simultaneously; using talk therapy along with cognitive-behavioral and alternative techniques in the process of healing.

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APPENDIX A

SLEEP RECORD

APPENDIX A SLEEP RECORD

Date _____

Times:

___ 7:00	___:15	___:30	___:45
___ 8:00	___:15	___:30	___:45
___ 9:00	___:15	___:30	___:45
___ 10:00	___:15	___:30	___:45
___ 11:00	___:15	___:30	___:45
___ 12:00	___:15	___:30	___:45
___ 1:00	___:15	___:30	___:45
___ 2:00	___:15	___:30	___:45
___ 3:00	___:15	___:30	___:45
___ 4:00	___:15	___:30	___:45
___ 5:00	___:15	___:30	___:45
___ 6:00	___:15	___:30	___:45
___ 7:00	___:15	___:30	___:45

Mark an "X" for when you went to bed.

Mark with a check mark for when you woke up.

Mark at the closest 15 minute interval.

APPENDIX B

HYPNOTHERAPEUTIC SCRIPT FOR SLEEP

APPENDIX B

HYPNOTHERAPEUTIC SCRIPT FOR SLEEP

As you begin to settle in your bed for your time of quality, balanced sleep; while you are settling into a comfortable and restful position that allows for normal, healthful, and uninterrupted sleep; and you are sensing the surface beneath you, and the way your body feels upon it, noticing the smells in the room, and the incidental sounds that may come from both the inside and the outside, knowing that bed means sleep, and as your mind begins to remember the feeling of refreshment that comes from deep, connected, relaxing and refreshing sleep; I'm asking you to be aware of any tensions in your body, and to begin releasing each one. In just a moment, I'll ask you to take a deep breath, and then to hold it for a count of four, and then to release it. And as you release it, picture yourself breathing out all of your bodily tension. And now, before your deep breath, touch your right hand index finger to your right hand thumb, and say in your mind the word relax, over and over. And now as you touch your finger and thumb, and mentally repeat the word relax. you can begin now taking your deep breath. Inhale. One, two, three, four, and release, good. And as you continue breathing normally, and as you release the touch between your forefinger and thumb, and while you prepare for your next deep breath; I'll ask you now to touch your middle right hand finger to your right hand thumb, repeating the word calm over and over in your mind, while picturing any and all of your concerns and worries being gathered together into a large pile in front of

you. And as you breathe, and repeat mentally the word, calm, and touch your middle right hand finger to its thumb, you might picture a beautiful pink bubble surrounding all of your concerns and worries completely, and slowly lifting them off of the ground, to float harmlessly while you sleep a deep, restful, balanced and connected sleep, realizing that you can always deal with these concerns when your mind is fresh and relaxed from a healthy balanced sleep. And as you breathe out each small breath, you notice that the bubble is lifting slightly higher with each exhalation, up to the realm of God, who will watch over those concerns while you enjoy your rest. And now let's take your second deep breath. Inhale, hold, two, three, four, release, good. And with this large exhalation, you might picture your bubble floating higher and higher, until its just a pinprick in the blue sky; safe in the hands of God. And as you continue to breathe normally, and release the contact between your middle finger and thumb; and while you prepare for your next deep breath, I'll ask you now to touch the third finger of your right hand to your thumb, and as you do so, repeat the word float, in your mind. And while you do these things, picture yourself at the ocean at the break of day, smelling the fresh saltiness of the air, hearing the cries of the gulls, the sound of the waves, the feel of a fishing pole in your hands, the sand under foot, hearing the sizzle of breaking waves, feeling the spray, seeing the wonderous color of a fresh new sun. Maybe seeing the ships as they sail and float across the horizon; so

that you may have the sensation of floating yourself. Maybe floating safely in a boat of your own on a calm day, completely relaxed and secure, rocking gently, at one with all, and at peace. And as you relax calmly, and float; its time to take your third deep breath, as you mentally rehearse the word, float over and over. Ready, inhale, hold, 1,2,3,4, release. And as you continue to float and relax calmly, and your conscious mind is filled with these sights, feelings, sounds, and smells; your deeper mind and intellegence is finding healthy ways to allow you to sleep for healthy, connected lengths of times, that will allow you to balance your life in a way that will affect all parts in a positive manner. Because your deeper wisdom understands that a balanced sleep includes ample amounts of each of the four stages of sleep, that all humans everywhere share in common, and that each of these follow each other successively, and that a healthy and beautiful dreamtime follows each group of the four stages. A dreamtime that allows and encourages continued quality sleep. And as you experience these four stages that are common to all of humanity, and join with the rest of the world in enjoying three or four of these connected cycles each night, and begin to enjoy the benefits of a rested and energetic mind and body; that you are experiencing the blessing of God upon all generations, from time immemorial. And as time goes by, you experience more and more of this blessing, until you are a full participant with all of humanity in sleep and dreamtime, that continues to daily find the healthy

balance between sleep and waking. And you may give yourself permission now and always to let go now, and enjoy creator's gift of the stages and cycles of deeper and deeper sleep, followed by portions of healthy, and peaceful dreamtime.

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