A Comparison of the Effectiveness of Three Behavioral Treatments on Intermittent and Terminal Insomnia

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A COMPARISON OF THE EFFECTIVENESS OF THREE BEHAVIORAL TREATMENTS ON INTERMITTENT AND TERMINAL INSOMNIA

by

Ellen Chatham Tripp

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
December 1985

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A COMPARISON OF THE EFFECTIVENESS OF THREE BEHAVIORAL TREATMENTS ON INTERMITTENT AND TERMINAL INSOMNIA

Ellen Chatham Tripp, M.A.
Western Michigan University, 1985

The purpose of this study was to compare the effectiveness of stimulus control, paradoxical intention, and progressive relaxation on intermittent and terminal insomnia. Their effect on sleep onset latency was also analyzed. Each treatment was given alone initially. Subsequently progressive relaxation was added to stimulus control and paradoxical intention.

Each of the eleven subjects served as his or her control by the use of baseline data taken at the beginning of the study. Data consisted of self-report sleep questionnaires which the subjects mailed in daily. Stimulus control was the most effective treatment on intermittent insomnia and sleep onset latency. No determination could be made about the effectiveness of stimulus control on terminal insomnia. Progressive relaxation was the second most effective treatment and paradoxical intention the least.
ACKNOWLEDGEMENTS

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Thanks also to my advisors, Chris Koronakos and Malcolm Robertson, for their continued support, and to Neil Kent for joining my committee on short notice.

Ellen Chatham Tripp
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CHAPTER I

INTRODUCTION

Insomnia is a malady of epidemic proportions affecting young and old alike. Estimates of people with sleep problems in the United States range from 10 to 50 million! Three large scale surveys mentioned by Webb (1975) yielded the information that 1 out of 7 Americans reported "often" having troubled sleep and fifty percent of the people surveyed said that they have trouble sleeping "sometimes". Webb (1975) reported that each year over one hundred million dollars is spent on prescription sedatives. Not included in the figures are tranquilizers, anti-depressants, alcohol, or over-the-counter sleep medications.

In the past, drug treatment for insomnia has been the treatment of choice but research has suggested that except for flurazepam and triazolam, no other hypnotic medication has proven effective beyond a two week period of use (Nicassio & Buchanan, 1981). Due to the problems of dependence, side effects, and withdrawal, there has been a growing interest in developing methods of effectively treating insomnia without drugs. Some very promising areas in this regard are various forms of behavioral and cognitive therapies.
Problem definition

Insomnia is a general term for a number of different problems causing a decrease in the amount of sleep. Almost everyone initially thinks of insomnia as an inability to quickly fall asleep at night. This has become known as "sleep onset insomnia", and the time it takes to fall asleep as "sleep onset latency" (SOL). Kleitman (1963) coined the terms now generally used to describe the other two types of insomnia: intermittent or sleep maintenance (numerous awakenings throughout the night with difficulty returning to sleep), and terminal or early morning awakening (waking so early in the morning that less than six hours of sleep are obtained).

It has become fairly standard criteria in insomnia research to define insomnia as the inability to fall asleep within thirty minutes, or to awake five or more times during the night, or to wake up so early in the morning that less than six hours of sleep are obtained. One or more of these problems should have existed for six months or more (Carr-Kaffashan & Woolfolk, 1979; Lacks, Bertelson, Gans, & Kunkel, 1983; Webb, 1975).

Causes and Treatment

There are many possible causes for insomnia including aging, diet, drugs, physical pathology, physiological
disturbances, psychopathology, circadian rhythm disturbances, cognitive intrusions, stress and anxiety, sleep environment factors, inappropriate stimulus control, and reinforcement for sleeplessness (Bootzin & Engle-Friedman, 1981). Many of these causes have engendered a specific treatment rationale. The numerous non-drug treatments that have been researched are: desensitization (systematic and single item), progressive relaxation with and without muscle tensing, hypnotic relaxation, autogenic training, stimulus control (including temporal and spatial), self-relaxation, desensitization without relaxation, and paradoxical intention.

**Somatic arousal**

Lawrence Monroe's (1967) initial research on insomniacs led to the idea of using behavioral methods rather than drugs for the treatment of insomnia. He found that insomniacs differed from normal sleepers in physiologic measures both before and during sleep. The measures he used in the study were heart rate, rectal temperature, pulse volume, and vasoconstriction rate. This theory of heightened somatic arousal rapidly led to experiments using progressive relaxation as a possible non-drug treatment for insomnia. Numerous studies have been conducted since Monroe's original research that have also shown

**Cognitive Arousal**

Cognitive, as well as somatic, arousal has been thought to cause insomnia since many insomniacs complain of "racing thoughts", worrying, and intrusive thoughts (Davidson & Schwartz, 1976). A vicious cycle is often set up as the insomniac lies there worrying about not being able to sleep, becomes further aroused and further awake. Cognitive interventions strive to break this cycle by redirecting the person's thoughts and emphasizing a relaxation response incompatible with arousal. Here again, autogenic training is very useful. The insomniac is directed to focus attention on the body feeling very warm and heavy, sinking into the mattress. Other methods of redirecting attention are meditation (Woolfolk et al., 1976, used a very simple abbreviated method quite successfully) and paradoxical intention (Turner & Ascher, 1979).
Using paradoxical intention, the insomniac is instructed to go to bed as usual but to try to stay awake. The performance anxiety of getting to sleep is thereby removed and the cognitive arousal reduced.

Attribution theory

There is an area of insomnia research that deals with the arousal of an insomniac in a different manner. The area of interest is attribution theory which deals with a person's perceptions of the causes of the psychological or behavioral events observed in himself. The insomnia research has dealt with both source reattribution and control reattribution. Ribordy and Denney (1977) explain the concepts this way:

In source reattribution, the insomniac is led to reattribute the source of his pre-sleep autonomic arousal to some non-emotional factor in his environment. In control reattribution, the insomniac is let to reattribute to himself the ability to fall asleep and remain asleep. (p. 39)

Classical Conditioning

Classical conditioning theories have led to stimulus control as a treatment approach to insomnia. (Bootzin, 1972). The rationale is that when people behave in ways incompatible with sleeping while in bed, the bedroom then loses its value as a cue to going to sleep. Bootzin's stimulus control instructions include these six steps:
(a) go to bed only when sleepy, (b) reserve the bed for sexual activities or sleeping only, (c) get out of bed if unable to fall asleep within ten minutes and return only when sleepy, (d) repeat step #3 if you return to bed and are still unable to sleep, (e) get up at the same time each morning, and (f) do not nap during the day. Tokarz & Lawrence (as reported by Nicassio & Buchanan, 1981) broke down the stimulus control into temporal control and stimulus control and found them to be effective individually and even more effective when used together.

Conclusion

The three most promising non-drug treatments at this time seem to be progressive relaxation, stimulus control, and paradoxical intention. They are easy to administer and require no special equipment. Consequently they are inexpensive and easily done by an insomniac at home. Teaching people to manage their insomnia by simply altering their perspective on bedtime (as in stimulus control and paradoxical intention) intrigued this investigator. Teaching people progressive relaxation as a useful tool not only for insomnia, but for general tension relief was appealing.

However, the bulk of the research has been on sleep onset insomnia, with little attention paid to intermittent or terminal insomnia except in passing. Lacks et al. (1983)
did a study comparing the effectiveness of stimulus control to a placebo treatment on sleep-maintenance insomnia, but did not include an examination of the effect on terminal insomnia.

The purpose of this study will be to compare the effectiveness of progressive relaxation, stimulus control, and paradoxical intention on both intermittent and terminal insomnia. Since these are often found together with sleep onset insomnia, data will also be collected on sleep onset latency.
CHAPTER II

METHOD

Subjects

The subjects were solicited by an advertisement in the newspaper and by word of mouth from friends of the investigator. In addition, almost half of the subjects came from various psychology courses at a medium size state supported college. The subjects were between the ages of 18 and 55, white, middle-to-upper class, and well-educated. The group consisted of 9 women and 3 men, one of whom later dropped out of the study.

To be in the study, subjects must have met all of the following criteria: (a) their sleep difficulty must have existed for more than 6 months and occur more than four nights of the week; (b) the length of time taken to fall asleep must usually be more than 30 minutes; (c) they must awaken 2 or more times during the night and have difficulty returning to sleep, or awaken so early in the morning that less than 6 hours of sleep are obtained; (d) their sleep difficulty must not be due to a situational crisis, physical ailment, or psychopathology as determined in an initial interview; (e) and the subject must consider
his or her difficult sleeping pattern a problem. The subjects were also required not to be currently in treatment for their insomnia, nor could they work an off-shift. Finally, each person was asked if they would be willing to cooperate with the requirements of the study. They would be required to fill out and mail in daily sleep questionnaire postcards, and practice the relaxation techniques twice a day at home.

Experimental Design

The design for this study was a "multiple baseline across subjects" or "time lagged control" design (Baer, Wolf, and Risely, 1968). In this design, each person served as his or her waiting list control, thereby eliminating the need for a separate waiting list control group. It has been shown repeatedly in other insomnia studies (Bootzin & Nicassio, 1978; Woolfolk et al., 1976) that such groups do not improve spontaneously.

Subjects began with either a 7 or 10 day baseline by following their normal bedtime routines and sending in a daily sleep questionnaire postcard each morning. The subjects were then randomly assigned to treatment conditions to begin the first two weeks of treatment. The three treatments to be compared were progressive relaxation, stimulus control, and paradoxical intention.
One group did progressive relaxation for 28 days, another followed stimulus control instructions for 14 days and then added progressive relaxation for the remaining 14 days, and the third group followed paradoxical intention instructions for 14 days and then added progressive relaxation for the remaining 14 days. In this way it was possible to examine the effects of each treatment alone and in combination with another. Counterdemand instructions (Bernstein & Borkovec, 1973) were given for the first week of each different treatment condition in an attempt to control for experimental demand improvement by the subjects. These counterdemand instructions basically stated were that since learning a new technique effectively takes practice, the person should not expect to see much difference in sleeping pattern for the first week, but could expect to see a change in the second week.

Treatment Conditions

The subjects receiving progressive relaxation training were taught using the manual prepared by Bernstein and Borkovec (1973). Sixteen muscle groups were tensed and relaxed in sequence. There was 5 seconds of tension and 20 seconds of relaxation. For training purposes, each muscle group was tensed and relaxed twice. Each training session was done in a private home for maximum comfort, and conducted by the investigator. Subjects were then
instructed to practice the technique twice a day at home, the second time at bedtime. They were also instructed to do the relaxation exercise when they awoke during the night and could not return to sleep. They were asked to indicate on each postcard exactly how many times during the previous day they practiced the progressive relaxation technique.

Subjects receiving instruction in stimulus control were given the same instructions used by Turner and Ascher (1979) in their study: (a) go to bed only when sleepy; (b) do not read, watch TV, or eat in bed; (c) get out of bed if you are not asleep within 10 minutes and return to bed only when sleepy; (d) get up at the same time each morning; and (e) do not nap during the day.

Subjects receiving the paradoxical intention treatment (Ascher & Efran, 1978) were told to go to bed as usual, but then to try to stay awake. However, they were told not to do anything like talk or listen to music to try to stay awake. They were given the rationale that this was to refocus their attention away from worrying about whether or not they would fall asleep.

During the treatment weeks, each subject was asked to follow "good sleep hygiene" (Lacks et al., 1983) which meant no caffeine after 4 P.M., no alcohol within 2 hours of bedtime, and no vigorous exercise before bed (sex was an exception to this).
Data Collection

The data were in the form of self-report daily sleep diaries, the most common method of data collection in insomnia research (Borkovec & Fowles, 1973; Lick & Heffler, 1977; Nicassio & Bootzin, 1974; Turner & Ascher, 1979). Although self-report data are not regarded as valid, the sleep diary has been shown to correlate substantially with EEG estimates and have a high test-retest reliability (Bootzin & Engle-Friedman, 1981; Coates et al., 1982; Frankel, Coursey, Buchbinder, & Snyder, 1976; Lichstein & Rosenthal, 1980).

Although insomniacs do appear to overestimate sleep onset and underestimate total sleep time, they do it in a consistent way and have done so in study after study, so their self-reports do provide a reliable and valid relative index of insomnia. The use of daily sleep diaries further enhances the reliability and avoids retrospective estimates. In discussing the relationship between sleep diaries and EEG readings, Bootzin and Engle-Friedman (1981) had this to say:

It is our view, however, that the experiential component of insomnia is likely to be central to the disorder. Insomnia may involve perceptual or cognitive distortions which may not be detected by electrophysical instruments. Thus, on balance, sleep diaries must be an essential component of any attempt to assess insomnia. They are a practical and efficient means of obtaining sleep construct information, and they provide a measure of the experiential component of the disorder. (p. 112)
The sleep diary used in this study consisted of the following questions:

1. What time did you go to bed last night?

2. Approximately how long did it take you to fall asleep? (circle one) less than 20 mins; 20-40 mins; 40-60 mins; 60-100 mins; more than 100 mins; other:

3. List the time periods that you were awake during the night:

4. What time did you awaken this morning? Did you get up then? If not, when?

5. How rested do you feel? 1 2 3 4 5

very

not at all

The questionnaire was printed on postcards for ease of daily delivery to the investigator. This method of data collection has been found to be more reliable than anecdotal reporting done once a week at a therapy session (Lacks et al., 1983; Lick & Heffler, 1977).

Independent and Dependent Variable Measures

The dependent variables are the number of minutes it takes to fall asleep (sleep onset latency), the number of minutes awake during the night, the number of minutes awake before desired hour, and degree of restedness. The independent variables are the three different treatments: stimulus control, paradoxical intention, and progressive relaxation.
CHAPTER III

RESULTS

The purpose of the present study was to determine which of three behavioral treatments for insomnia (stimulus control, paradoxical intention, and progressive relaxation) would be the most effective in decreasing or eliminating intermittent and terminal insomnia. Sleep onset latency was also examined to see if the results would agree with previous studies.

Figures 1, 2, and 3 address the issue of intermittent insomnia. Figure 1 illustrates the amount of time awake during the night for the subjects receiving the stimulus control treatment. One subject from this group dropped out of the study after examining the requirements. The stimulus control treatment decreased time awake during the night for two of the three remaining subjects. Stimulus control with relaxation further reduced the time awake for these two and reduced the time awake for the third as well. During the baseline period, the subjects (S1, S4, and S7) were awake a mean of 63, 141, and 111 minutes per night, respectively. The first week of the stimulus control condition, S1 reported an increase from the baseline mean of 63 to 114 minutes. However, S4 and S7
showed an average decrease in time awake during the first week of stimulus control: 141 to 35 and 111 to 59 minutes, respectively. Unfortunately, the data were lost in the mail for subjects 1 and 4 for the second week of stimulus control. Interestingly, subject 7 showed continued decline in time awake during the night to a mean of 25
minutes a night. After two weeks of stimulus control, subjects were taught progressive relaxation and instructed to add the relaxation exercise to the stimulus control procedure at bedtime, and any time during the night when they awoke and had difficulty returning to sleep. They were also told not to expect to see much of a change during the first week due to the fact that, like any new skill, doing progressive relaxation effectively would take practice. This was done in an attempt to control for any treatment expectancy effect. Despite the counterdemand instructions, all subjects showed a decrease in total time awake during the night under these new conditions. Subject 1 showed a decrease in average minutes awake from 114 during stimulus control to 34 and 40 respectively for the two weeks of added relaxation. Subject 4 showed a decrease from 35 to 29 and 16; and subject 7 from 59 and 34 to 41 and 30.

Figure 2 illustrates the amount of time awake during the night for the subjects in the paradoxical intention group. Paradoxical intention decreased time awake for only one of the four subjects; however, paradoxical intention with progressive relaxation decreased time awake for three of the four when compared to the means during baseline. During the baseline period the four subjects (S's 2, 5, 8 & 11) were awake an average of 153, 182, 111,
Figure 2. The Amount of Time Awake During the Night in Minutes for the Subjects in the Paradoxical Intention Group.

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and 92 minutes respectively. The first week of the paradoxical intention instructions showed slight decreases in three of the cases and an increase in the fourth case. However, by the end of the two weeks of paradoxical intention three subjects were awake more during the night than they had been during baseline. The mean number of minutes awake for subject 2 increased from 153 to 181, for subject 5 from 182 to 252, and for subject 8 from 111 to 228. Subject 11 showed a decrease in time awake from an average of 92 minutes to 65 minutes by the end of the paradoxical intention period.

After two weeks of paradoxical intention, subjects were taught progressive relaxation and instructed to add this to the paradoxical intention instructions. This group was also told that they should not expect to see much of a change for the first week. Again, despite this, two subjects showed substantial decreases in average time awake during the first week of the relaxation period. Subject 2 showed a decrease from 181 to 76 minutes awake, and subject 8 a decrease from 228 to 35 minutes. Subject 11 showed a slight increase from 65 to 71 minutes, and subject 5 increased from 252 to 278 minutes on the average. The second week of relaxation did not bring any further gain, but at the end of the four weeks of treatment 3 of the 4 subjects in this group were getting more sleep. Subject 2 went from a mean of 153 minutes
awake during baseline to 96 by the end of treatment. Subject 8 went from 111 to 88, and subject 11 went from 92 to 54. Subject 5 grew steadily worse and went from a mean during baseline of 182 minutes awake to a mean of 337 by the end of treatment. Realizing just exactly how little sleep she was getting, she consulted a doctor and he prescribed an anti-depressant.

Figure 3 illustrates the amount of time awake during the night for the people in the progressive relaxation only group. Subjects 3, 6, 9, and 12 were awake mean times of 23, 64, 126, and 85 minutes respectively during the baseline period. After the baseline, subjects were taught progressive relaxation to do for four weeks. Like the other two groups, subjects in this group were told not to expect to see a change in the first week of the relaxation period. They were told that as they practiced and became more proficient they could expect to see some change in their sleeping pattern. During the first week of the relaxation treatment, subjects 3 and 6 increased average time awake from 23 to 41 minutes, and 64 to 72 respectively. Subject 9 remained the same, and subject 12 decreased average minutes awake from 85 to 39. Subject 12 continued to show a decrease, but the other subjects developed an up and down pattern in the average time awake per week.
Figure 3. The Amount of Time Awake During the Night in Minutes for Subjects in the Progressive Relaxation Only Group.

Figure 4 illustrates sleep onset latency for all treatment groups and all subjects. The time categories of less than 20, 20-40, 40-60, 60-100, and over 100 are the
same ones used in the daily sleep questionnaires completed by the subjects. Making the judgement that falling asleep in less than 20 minutes would be optimal, the data were examined to see which of the treatments would best accomplish this goal. It appears that the stimulus control condition, with or without added relaxation, most effectively and consistently enabled subjects to fall asleep in less than 20 minutes. Progressive relaxation was the second most effective treatment and the least effective was paradoxical intention.

Figure 5 illustrates the degree of restfulness experienced by each subject in each treatment group. The rating scale was on the sleep questionnaire and went from 1 to 5, with 1 meaning very rested and 5 meaning not at all rested. No conclusions may be drawn from these data. There are no clear trends, except for the fact that whether or not a person feels rested varies a lot from day to day. It should also be noted that a person's degree of restfulness can depend on many factors, just one of which is amount of sleep obtained on any given night.

One of the purposes of this study was to determine if any of the three targeted treatments would be effective in treating terminal insomnia. Only three out of the eleven subjects found terminal insomnia a problem, and data will be presented on them alone. It was purely by coincidence that all three subjects were in the paradoxical intention
Figure 4. Sleep Onset in Minutes for all Subjects in all Treatment Groups.
Figure 5. Degree of Restfulness for all Subjects in all Treatment Groups. Rating from 1 to 5 with 1 meaning Very Rested and 5 meaning Not At All Rested.
group. Figure 6 illustrates the number of minutes each of them awoke before they wanted to. Obviously this is a very subjective complaint, but the hour chosen by each subject did not seem unreasonable to this investigator. Subject 2 chose 6 A.M. as a desirable hour, subject 5 chose 6:30 A.M., and subject 8 chose 5:30 A.M. Subject 2 was consistently bothered by early morning awakening and went from a mean of 109 minutes during baseline to 48 minutes by the end of the four weeks of treatment. Subject 5 was also bothered fairly regularly by early morning awakening, but, as seen earlier, slept less and less and showed an increase in all measured categories. Subject 8 was bothered less frequently, but still reported an improvement in early morning awakening times, going from a mean of 82 minutes during baseline to 35 minutes by the end of treatment.

The stimulus control treatment decreased time awake during the night for two of the three subjects in this group. Stimulus control with relaxation further reduced the time awake for these two and reduced the time awake for the third as well. Paradoxical intention reduced time awake during the night for only one of the four subjects in this group. Paradoxical intention with relaxation reduced time awake for three of the four when compared to baseline measures. Progressive relaxation alone consistently decreased time awake for one of the four
subjects in this group and helped intermittently for the other three. Sleep onset latency was reduced most effectively by stimulus control, less so by progressive relaxation, and increased by paradoxical intention. Improvement in early morning awakening occurred for two out of three subjects by the end of the paradoxical intention with relaxation treatment. The data on degree of restfulness for all subjects in all treatment conditions were inconclusive.
CHAPTER IV

DISCUSSION

The purpose of this study was to determine if inter­mittent and terminal insomnia could be successfully treated using stimulus control, paradoxical intention, or progressive relaxation. Sleep onset latency was also examined since this type of insomnia frequently accom­panies the other two. Each of the three treatments was initially used alone, and then progressive relaxation was added to both the stimulus control and paradoxical inten­tion treatments to determine if it would make either of them more effective. It was expected that progressive relaxation would be the most effective treatment, however, the expectation was not supported by the data in this particular study. Stimulus control proved to be more effective in reducing sleep onset latency and stimulus control with relaxation was the most effective in reducing the amount of time awake during the night. Stimulus control was found to be slightly superior to progressive relaxation in a study done by Turner and Ascher (1979). As insomniacs struggle to fall asleep and stay asleep, the bed loses its value as a discriminative stimulus for
sleeping. Stimulus control retrains a person to associate
the bed with sleepiness because the person is instructed
to get out of bed if not asleep within ten minutes, and to
return to bed only when sleepy. Progressive relaxation is
taught on the premise that the insomniac stays awake
because of muscle tension or heightened physiologic
arousal. The results of this study support the idea of a
discriminative stimulus problem rather than a tension or
arousal problem.

In contrast to the findings of Ascher and Efran
(1978), paradoxical intention only seemed to aggravate a
long sleep onset latency. However, 2 of the 3 subjects in
the paradoxical intention group had some improvement with
terminal insomnia. They attributed the improvement to the
added relaxation procedure, not to the paradoxical inten­
tion instructions. Terminal insomnia proved particularly
difficult to assess. To claim that a particular treatment
is effective for terminal insomnia is a risky conclusion.
There are too many events in the course of a night's sleep
to be able to say with certainty exactly why a person
slept or did not sleep through until morning. It would be
very difficult to assess the effect of a treatment done at
11 P.M. on an occurrence 7 or 8 hours later.

Insomnia is a very subjective problem and it affects
many aspects of a person's life. This investigator was
interested in the clinical utility of the study and wanted an answer to the question of what non-drug treatment would be best for clients complaining of insomnia. "Statistical significance" is not significant to the insomniac at all if he or she still experiences difficulty falling asleep or staying asleep, and wakes up feeling tired every morning. The subjects in this study reported sleeping better, although the ratings of restfulness did not change very much in any consistent direction. This could be due to subject compliance and wanting to please the investigator by saying that the treatment worked. It is more likely that degree of restfulness did not change because there are many factors aside from amount of sleep that are involved in feeling rested.

The subjectiveness of insomnia is precisely why self-report data were collected. The individual experience and opinion of the subjects in the different treatment groups were important to this researcher. Anecdotal data included very positive remarks about progressive relaxation. All the subjects reported feeling "wonderful" after going through the progressive relaxation exercise. One subject was so enthusiastic about it that she taught it to all three of her teenagers and now they are all sleeping better! The subjects in the paradoxical intention group were quite skeptical, but willing to give it
a try. At the end, one subject was heard to remark, "I knew it wouldn't work." One subject reported that following the "good sleep hygiene" rules helped her. It should be noted, however, that good sleep hygiene alone during the baseline period did not lead to better sleep.

An article by Nicassio and Buchanan (1981) suggested that perhaps different treatments for different types of insomnia would be best, and therefore a more definitive diagnosis would need to be made. The idea certainly has merit and points to a weakness in this study. The sleeping difficulties experienced by the subjects in this study were quite varied even though they each initially met the criteria. The subjects experiencing early morning awakening were not evenly distributed among the treatment groups so no comparison of treatment effect could be done on this variable. The severity of the sleeping difficulty measured during baseline was different for each subject and varied widely within each treatment group. This makes it difficult to generalize the findings of this study to a broad group of insomniacs.

The area of diagnosis is an important one. Too often a physician will prescribe a sleeping medication for a patient complaining of insomnia without taking a sleep history or trying a non-drug treatment. An accurate diagnosis could be made with a sleep diary for baseline data and assessment of effectiveness of treatment. Trying
a patient on a stimulus control with progressive relaxation regime would be a good way to see if the insomnia could be controlled without medication. Both can easily be taught by using a booklet or tape. Neither have the potential for abuse or side effects of most sleeping medications. If a behavioral treatment did not help, that would be further information for the physician. The data subject 5 collected in this study helped her and her physician make a proper decision about her insomnia.
APPENDIX

Sample of Informed Consent

INFORMED CONSENT

Program Name: Evaluation of treatment strategies for insomnia
Investigator: Ellen Tripp
Starting Date: August 1985

My name is Ellen Tripp and I am a graduate student at Western Michigan University. I'm working on my thesis as a partial requirement for my Master of Arts degree in psychology. This study is a major part of the thesis.

The study is designed to compare the effectiveness of three of the most popular behavioral methods for the treatment of insomnia. There will be no drugs used in the study, and none of the behavioral treatments will hurt you in any way. They are quite easy and you will be required to practice them regularly in your home for a few minutes each day to obtain maximum benefit from them.

You will also be required to answer 5 brief questions each morning regarding your sleep of the night before. They will be printed on postcards (provided to you) and one mailed to me each day for the 6 weeks of the study and a few weeks later as a follow-up.

Another requirement is to attend 1 training session of 30-45 minutes that I will conduct.

The only risk in participating in this study is that your sleeping difficulties may not improve.

I, _______________________ (your name) hereby give my informed consent to participate in this program. I understand that I may withdraw my consent at any time. I understand that all information which is obtained will be kept strictly confidential, and that all efforts will be made to keep my identity anonymous. I consent to allow this information to be presented to other professionals through reports and presentations provided my identity remains confidential.

_________________________________  __________________________
Your Name                              Date

_________________________________  __________________________
Investigator                          Date

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BIBLIOGRAPHY


