

The Use of Subliminal Auditory Stimuli in Terminally Ill Oncology Patients

Eldon Taylor PhD and Charles McCusker PhD

Taylor, E. & McCusker, C. 1995. "The Use of Subliminal Auditory Stimuli in Terminally Ill Oncology Patients." *International Journal of Alternative and Complementary Medicine*. February 1994. Pages 26-28

Summary

This study sought to evaluate the use of subliminal stimuli as an ancillary self-care modality for cancer patients.

Subjects consisted of fifty adult terminally ill oncology patients. Subliminal affirmations were written from principles in the literature of psychoneuroimmunology and recorded at near liminal levels on audio tape. The results of this study indicate more research is warranted in this area. It would appear from the findings that the tapes did have a positive effect on life expectancy and remission rates.

Introduction

Investigation into the effects of subliminal influence on behavior and physiological response is not new; studies into this area of research date back to the 19th century (Zuckerman, 1960). Subliminal perception refers to the processing of stimuli too weak in intensity or too brief in duration to be identified consciously (Borgeat, Boissonneault, Chalout, & Elie (1989), and/or disguised such as in certain shadowing tasks resulting in an "audio illusion" (Taylor, 1987 and Taylor 1993). Dixon (1971) prefers the term unconscious perception to describe all cases when responses are governed by stimuli of which the recipient is unaware, while the term subliminal perception is reserved for those cases where the stimulus is below some independently determined limen. Wolman (1973) defines the absolute threshold, or stimulus limen, as the intensity at which a particular sound is just discriminable from silence on a given percentage of trials.

Research into subliminal auditory stimuli has been an area of considerable controversy and debate. Considerable evidence is available to support the assertion that subliminal auditory stimuli is capable of inducing behavioral and physiological change. (Dixon & Henley, 1991, Swingle, 1991, Taylor, 1994). Meta-analysis has demonstrated "that subliminal presentation of drive related stimuli produced significantly stronger effects on behavior than supraliminal presentation of the same stimuli" (Bornstein, 1990). Indeed, the meta-analytic analysis of Hardaway's also demonstrated a reliable significance in the subliminal presentation of the Silverman mommy messages (1990). Urban (1992) states that the present consensus is that subliminal perception is a real phenomenon and what is left to be resolved are questions relating to kinds and levels of effects that can be obtained by this method. Dixon and Henley assert:

From the results of applying subliminal stimulation to the problems of diagnosis and therapy, three conclusions may be drawn. First, the data support the view that the meaning of external stimuli of which the recipient is unaware may be responded to and determine emotional responses, lexical decisions, overt behavior, and subjective experience.

Second, they confirm the reality of psychopathology, that is, of a substrate of emotionally colored stored information with a potential for producing somatic symptoms and disorders of thinking, affect, and behavior. Third, to the extent that the content of psychopathology is screened from conscious scrutiny and therefore impervious to supraliminal information, so may it be accessed and ameliorated by drive-related stimuli of which the subject is not aware. (1991).

In the clinical setting, subliminal auditory stimuli have been utilized in the realm of psychotherapy with considerable success. Swingle (1991) reports ten years of work with subliminal auditory stimulation in a large number of experiments and currently uses subliminal audiotapes in conjunction with clinical treatment. Costello and Budzinski (1991, cf. Urban, 1992), in a preliminary report on the utilization of commercially produced subliminal audiotapes with a clinical population, report the tape-users' scores of improvements on several measures were significantly better than those of the control group and were equivalent to those of the psychotherapy group.

Borgeat et al. (1989) report that auditory subliminal suggestions can influence cardiac response to an unrelated and benign stress. Subjects, after listening to preconscious activating suggestions passively, during a stressing task that followed the passive listening, and after that task, showed significant effects of the activation subliminal suggestions during and following the stressing task.

Bourgeat and Goulet (1983) report that auditory suggestions of an intensity below the recognition threshold influenced physiological responses: activating suggestions induced higher heart rate and skin-conductance level than when no suggestion or deactivating suggestions were present. Corteen and Wood (1972) in an earlier study, associated city names with shock stimuli and then embedded these city names in material presented to the non-attended channel in a dichotic listening task. The shock-associated city names gave rise to a significant number of autonomic responses even though the subjects were unaware of them. Roche reported a significant decrease in symptomology of children diagnosed with Attention Deficit Hyperactive Disorder (1993) and this author reported a significant increase in physiological measures associated with distress, as measured by a polygraph instrument when the drive related subliminal audio message "danger" was presented (1994).

Evidence thus far supports the assertion that subliminal auditory stimuli have the potential to affect physiological processes. To what degree is still a matter of enquiry due to the limited scope of research that has been conducted into auditory subliminal stimuli. The purpose of this preliminary study is to investigate the effect of positive and affirmative auditory subliminal stimuli on the wellbeing and life expectancy in patients with a terminal diagnosis of cancer. Specifically, can remission rates and life expectancy in subjects with terminal cancer be extended using subliminal auditory stimuli, and if so, to what extent?

Further, the philosophy of cognitive engineering offers a method of altering belief. Recent research suggests that belief plays a significant role in the outcome of disease (Phillips, 1993). The theory behind this form of behavioral therapy is stated by Ellis as, "by disputing irrational beliefs and replacing them with rational, realistic, and positive statements, behavior change is effected" (195-). He offers a simple model for understanding. The A-B-C model, as it is called, is graphically depicted as follows:

A-----> B-----> C

(Activating event) (Belief) (Consequence/ emotional & behavioral)

The authors make the supposition that by changing a belief, a method accomplished by exposure to auditorially presented subliminal statements that become internalized as self-talk, a form of "semantic priming", which can also be seen as a catalytic activating event (changing the focus of the perceptual lens), a different and positively modified interpretation of the event will result. This difference in interpretation changes expectation which defines many emotional and behavioral responses (Taylor, 1994).

The theoretical application of subliminal stimuli in this study assumed:

1. Certain diseases could be the result of behavioral strategies (Taylor, 1993, Rossi, 1986)
2. Cancer could be aggravated by psychological factors such as stress (Seyle, 1974, Locke and Colligan, 1986)
3. Psychosocial immunocompetence conditioning factors influence wellness and recovery (Kiecolt-Glaser et al, 1984).
4. Cognitive behavioral therapy principles are implementable via subliminal stimuli, altering belief (expectation) and resulting in a positive influence of disease outcome (Ellis, 1988).

Cancer treatments either without proven efficacy, or of questionable methods, have achieved new levels of popularity, particularly among the well-educated (Cassileth et al, 1991). Treatments such as macrobiotic diets (Bowman, Kushner, Dawson, & Levin, 1984), high-dose vitamin C (Moertel et al. (1985), immunoaugmentive therapy (Curt et al. 1986), Laetrile (Moertel et al., 1981, 1982), as well as others have been subject to investigation. Cassileth et al. (1991) report that for patients with extensive disease, there are no significant difference in length of survival between groups using conventional treatment regimens and unorthodox treatments such as those mentioned above.

For patients diagnosed with terminal cancer (distant metastasis at time of diagnosis and extensive disease), standard methods of treatment (chemotherapy and radiotherapy) serve to reduce tumor size, diminish pain, as well as delay disease progression. These treatments are

not curative for patients with a terminal diagnosis of cancer and few other treatment options are available. Despite this, alternative methods in the treatment of cancer have received little support or recognition from the medical profession.

Although the rate of cure is relatively high for many cancer sites, as with leukaemia and Hodgkin's disease (American Cancer Society, 1992), many disease sites remain incurable. Of note, 258,000 people in the U.S. died of cancer in 1988 (American Cancer Society, 1992). For these reasons alone, it makes sense to explore and research alternative treatment methods that have the potential to generate improved remission rates in the treatment of cancer, in conjunction with traditional treatments.

In this preliminary study, the efficacy of using subliminal auditory perception in the treatment and control of oncology patients with incurable disease is investigated. Since this is a preliminary study, stringent controls were not always possible. Despite this limitation, this study indicates that the use of positive, self-affirming messages delivered to terminal oncology patients using an auditory subliminal medium can lengthen life expectancy and improve quality of life.

Method/ Subjects

Fifty males and females over the age of fifty and diagnosed with terminal cancer (defined as extensive disease with distant metastasis) were recruited through professional cancer clinics and support groups in seven states. Ten subjects were lost due to non-deliverable addresses, nine were not seen for follow-up, one subject's physician was ill and unable to complete the questionnaire, and no response was received from thirteen subjects' physicians. Of the seventeen subjects remaining, three were not included in the study because they were HIV positive, leaving a total subject population of fourteen.

Materials

Subjects were provided with a subliminal program entitled Cancer Remission. The messages were recorded using the "Taylor method" (Kruse, 1992), applying simultaneous information of both forward and reverse speech. Messages were delivered within the band width of music

slightly beneath the music's outer edge peak volume. Subjects were instructed to use the tapes with their home stereo equipment or portable cassette players.

Design and Procedure

During a three-and-a-half-year period, tapes were made available to subjects only with the consent of their primary physician. Subjects were advised to use the tape as often as possible, including during sleep. Subjects were assured that there would be no adverse effects from using the tapes.

Questionnaires were sent to each subject's physician two to four years after the subjects had received the subliminal program. The questionnaire consisted of twelve questions that were rated on a five-point scale: 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; and 5, strongly agree. The twelve questions consisted of four general categories: A, the patient's attitude toward their disease before they used the program; B, the patient's attitude toward their disease after they used the program; C, the patient's survival and quality of life; and D, the physician's perception concerning their patient's belief that health can be positively effected by the mind.

Results

Statistics for survival time in patients with terminal cancer (distant metastasis at time of diagnosis) from the American Cancer Society is available only for specific sites in relation to five-year survival. No statistic for an overall survival rate for patients with terminal diagnoses is available. For this reason, it was not possible to compare the mean survival in months for the subjects in this study against the mean survival rate in months for the national average. Also, prognosis and mean survival time varies depending on the extent of metastasis at time of diagnosis and the primary site of the disease.

At the conclusion of this study, which lasted 42 months, six subjects were living and eight were dead. Of those patients who died, they lived an average of 15 months longer than the original diagnosis would have indicated.

For the six subjects that were living at the completion of the study, all of the physicians strongly agreed that the mind or attitude of the patient is relevant to their health, with the

exception of one physician who did not respond to this question. In the group of patients who were dead at the completion of the study, the physicians' responses were as follows: four strongly agreed that the mind or attitude of the patient was relevant to the patient's health, three agreed and one was neutral.

For the subject group that was alive at the completion of the study, two physicians strongly agreed that the subliminal program served a valuable function for the patient, three agreed and one did not respond. For the group that was dead at the end of the study, five physicians were neutral to whether they felt the program served a valuable function for their patient, two strongly agreed and one agreed that the program served a valuable function for their patient.

Conclusion

From the results of this preliminary study, it appears evident that subliminal auditory stimulation is likely to be of benefit to patients with a terminal diagnosis of cancer. Since this is a preliminary study, future investigation into this area is needed to obtain more concrete results. Since medicine at present offers little in the way of treatment to a large number of these terminal patients, it makes sense to pursue any area of investigation that promises some hope to these people, especially in terms of positive outcome and cost effectiveness.

Discussion

Since this is a preliminary study and no previous studies are available in which to compare the efficacy of the use of audio subliminal technology in the treatment of cancer or other disease states, it is difficult to make definitive assertions on the usefulness or overall effects of this technology in the treatment or control of terminal cancer. However, the results of this study strongly suggest that further investigation is warranted. If the data from the study is evaluated from the perspective of simple percentages, some interesting and provocative implications emerge. Of fourteen subjects terminally ill with cancer, 43% were reported as in remission. For every neutral or negative response from physicians to question 11 "I believe that the mind or attitude of the patient is relevant to their health and/or health care", there is a deceased patient. This suggests the importance of a positive physician attitude. Indeed, the

expectation of the physician has been linked to patient outcome in at least one other study. (Phillips, 1994).

The results of this study suggests that the subliminal cancer tapes provided to the fourteen subjects did have an effect with some increase in life expectancy of the subjects in this study, as well as the quality of life these patients experienced. It is impossible at this point to ascertain whether other variables may also have played a role, such as physicians care, type of cancer experienced, or the will of the patient themselves. Of interest, for the group of subjects alive at the end of the study, is the fact that these subjects' physicians overall had a higher agreement level that the tape was of value to their patients and had a higher level of belief that the mind or attitude of the patient plays a significant role in their health. Overall averages at the time subjects entered into the study did not differ significantly between the two groups, meaning that subjects in one group did not enter closer to the beginning or the end than the other group. Future studies assessing the effects of subliminal technology on the remission rates of subjects with a terminal diagnosis of cancer will need to employ tighter controls, limiting the number of confounding variables such as length of time the tapes are actually used, primary site of disease, extent of metastasis as determined through CAT scans, MRIs, and other definitive medical tests, as well as more in depth demographic information. No records were kept regarding the amount of time subjects actually listened to the tapes (i.e., number of hours per day). For this reason, it was not possible to assess whether the actual amount of listening time was a significant factor in remission rate and response.

It is well documented that prognosis in cancer patients will vary significantly depending on the primary site of the disease, stage, number of nodes involved, and the extent of metastasis that has occurred at time of diagnosis (American Cancer Society, 1992). In this study, no records of site, stage and extent of metastasis were considered. For this reason, it is possible that the subjects who lived longer had less disease than those patients who were dead at the time the collection of data was completed. In future studies, a more homogenous and larger sample would be of benefit in relation to site of disease. Using subjects with a more similar disease state would eliminate a number of confounding variables.

As well, expected prognosis or life expectancy for subjects was determined by their physicians and no standard criterion was used. Bias on the part of the individual physicians toward their patient due to coping styles, attitude, response to treatment, and/or other variables may have affected the prognosis physicians gave their patients. For example, a patient with a positive attitude toward their disease may have been given a longer prognosis than a patient with a negative attitude toward their patient's disease, independent of other criterion such as disease state.

No control nor placebo groups were utilized in this study. In future studies control and placebo groups could be implemented.

Acknowledgement

The authors wish to express their gratitude to the *Open Mind Foundation* for their support with this research.

References

- Cancer Facts and Figures-1992. Atlanta, Georgia: American Cancer Society Inc, 1992.
- Borgeat, F., Boissonneault, J., Chaloult, L., & Elie, R. (1989). Psychophysiological responses to subliminal auditory suggestions for activation. *Perceptual and Motor Skills*, 69: 947-953.
- Borgeat, F., & Goulet, J. (1983). Psychophysiological Changes following auditory subliminal suggestions for activation and deactivation. *Perceptual and Motor Skills*, 56: 759-756,
- Bornstein, R.F. (1990). Critical Importance of Stimulus Unawareness for the Production of Subliminal Psychodynamic Activation Effects: A Meta-Analytic Review. *Journal of Clinical Psychology*, 46 (2): 201-210.
- Bowman, B.B., Kushner, R. F., Dawson, S. C., & Levin, B. (1984). Macrobiotic diets for cancer treatment and prevention. *Journal of Clinical Oncology*, 2, 702-711.
- Cassileth, B. R., Lusk, E.J., DuPont, G., Blake, A. D., Walsh, W. P., Kascius, L., & Delray, J. S. (1991). Survival and quality of life among patients receiving unproven as compared with conventional cancer therapy. *The New England Journal of Medicine*, 324: 1180-1185.
- Corteen, R.S., & Wood, B. (1972). Autonomic responses to shock associated words. *Journal of Experimental Psychology*, 94: 308-313.
- Curt, G. A., Katterhagen, G., Mahaney, F. X. (1986). Immunoaugmentive therapy: A primer on the perils of unproved treatments. *Journal of the American Medical Association*, 255: 505-507.
- Dixon, N. F. (1971). *Subliminal Perception: The Nature of a Controversy*. London: McGraw-Hill.
- Dixon, N.F. & Henley, S.H.A. (1991). Unconscious Perception: Possible Implications of Data from Academic Research for Clinical Practice. *Journal of Nervous and Mental Disease*, 178 (5): 243-252.
- Ellis, Albert. (1988). *How to Stubbornly Refuse to Make Yourself Miserable About Anything-Yes, Anything*. Lyle Stewart, New York, N.Y.
- Hardaway, R.A. (1990). Subliminally Activated Symbiotic Fantasies: Facts And Artifacts. *Psychological Bulletin*, 107 (2): 177-195.
- Kielcolt-Glaser, J. et al. (1984). Psychological Modifiers of Immunocompetence in Medical Students. *Psychosomatic Medicine*, 46: 7-14.
- Kruse, P. et al. (1992). *Suggestion and Perceptual Instability; Auditory Subliminal Influences*. University of Bremen, Germany. (Draft of paper).

- Moertel, C. G., Fleming, T. R., Rubin, J., et al. (1982) A clinical trial of Amygdalin (Laetrile) in the treatment of human cancer. *The New England Journal of Medicine*, 306: 201-206.
- Moertel, C. G., Fleming, T.R., Creagen, E. T., Rubin, J., O'Connell, M. J., & Ames, M. M. (1985). High-dose vitamin C versus placebo in the treatment of patients with advanced cancer who have had no prior chemotherapy: A randomized double-blind comparison. *New England Journal of Medicine*, 312:137-141.
- National Research Council. (1991). In *The Mind's Eye: Enhancing Sports Performance*. National Academy Press.
- Phillips, David. (1994). *Lancet*, 342: 1142-1145.
- Roche, K. (1993). *The Effects of Auditory Subliminal Messages on the Behavior of Attention Deficit Disordered Children*. Thesis. Colorado State University.
- Rossi, E.L. (1986). *The Psychobiology of Mind-Body Healing*. W.W. Norton & Company, New York.
- Selye, H. (1974). *Stress Without Distress*, 14. New American Library, New York.
- Swingle, P. G. (1991). *Subliminal Treatment Procedures: A Clinician's Guide*. Hillsdale, N. J. Erlbaum.
- Taylor, E. (1987). *Subliminal Learning: An Eclectic Approach*. R K Book, Big Bear City, CA.
- Taylor, E. (1993). *Wellness: Just A State Of Mind*. R K Book, Big Bear City, CA.
- Taylor, E. (1994). *Thinking Without Thinking*. R K Book, Big Bear City, CA.
- Taylor, E. (1994). *Belief and Wellness*. In press.
- Urban, M. J. (1992). Auditory subliminal Stimulation: A re-examination. *Perceptual and Motor Skills*, 74: 515-541.
- Wolman, B. B. (1973). *Handbook of General Psychology*. Prentice-Hall, Inc.
- Zuckerman, M. (1960). The effects of subliminal and Supraliminal suggestion on verbal productivity. *Journal of Abnormal and Social Psychology*, 60(3): 404-411.

STUDY

TABLE ONE

Subjects living at conclusion of study

SUBJECT (L = Living)

		1	2	3	4	5	6
Q U E S T I O N	1	-	5	5	5	4	4
	2	-	5	5	5	4	3
	3	-	5	4	5	4	4
	4	L	L	L	L	L	L
	5	-	5	-	5	4	3
	6	-	5	5	5	4	3
	7	-	5	3	5	4	3
	8	-	5	5	5	4	4
	9	-	5	4	5	4	3
	10	-	5	4	5	4	4
	11	-	5	5	5	5	5
	12	-	5	3	5	4	4

TABLE TWO

Subjects deceased at conclusion of study

SUBJECTS

		1	2	3	4	5	6	7	8
Q U E S T I O N	1	3	4	3	4	2	3	5	3
	2	3	3	3	4	4	4	4	3
	3	3	4	2	4	3	3	5	3
	4	1yr	1yr	1yr	1mo	6-9mos	3yrs	3yrs	5mos
	5	3	5	4	5	2	4	5	5
	6	3	1	1	4	2	5	5	1
	7	3	2	1	4	3	3	5	3
	8	3	1	2	2	2	4	5	3
	9	3	3	3	4	3	3	5	3
	10	3	3	3	5	3	3	5	4
	11	3	5	4	5	4	4	5	5
	12	3	5	4	5	3	4	5	3

APPENDIX A

AFFIRMATIONS FOR CANCER REMISSION PROGRAM

I am a gift. I am created perfectly. I am loved. I love myself. I forgive myself. I forgive all others. My mind is powerful. My life force is eternal.

My consciousness is alive.

My consciousness exists throughout my body.

My cells are conscious. My mind is conscious. My cells form perfectly.

My body rejects alien intrusions. My body heals perfectly. My healthy cells multiply. My cells rejuvenate. I am healthy. I am strong. I am positive.

I am confident. I love myself. I love my body.

Consciousness will this so. I am relaxed. I breathe deeply. I feel healthy. I feel great. I see health. I sense health. I accept health. I am healthy. I am grateful. I am peaceful. I am giving. I am healed. I am whole. I smile. I laugh.

I enjoy living.

I am a wonder.

I am thankful. I live in Light.

Life is a miracle. I am a miracle.

My relationships are positive. I am forgiving. I am loving.

Health is natural.

My cells are miracles.

My body naturally creates itself perfectly. I will this so.

I release. I love you God.

And so it is.

Thank you, thank you, thank you.

I forgive myself.

I forgive all others. I am forgiven.

It's okay to do better than daddy. Mommy and I are one.

APPENDIX B

QUESTIONNAIRE SENT TO THE DOCTORS

For each of the following questions, please follow the scale and indicate the numbered response that most clearly reflects your opinion.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

- 1 My patients attitude about their disease improved.
- 2 My patients sense of responsibility regarding their health in general was higher than most without.
- 3 My patients quality of life appeared to be positively influenced after using the program.
- 4 My patient lived (months/years) beyond the original diagnosis.
- 5 My patient was cooperative and responsive.
- 6 My patient experienced remission and/or restoration of health.
- 7 I observed marked differences in my patients attitude after using the program.
- 8 I observed improvement in my patients physical health.
- 9 My patients adjustment toward their disease seemed to improve in relation to their use of the program.
- 10 I feel that the program served a valuable function for this patient.
- 11 I believe that the mind or attitude of the patient is relevant to their health and/or health care.
- 12 Programs of this nature do not necessarily hold out false hope for the patient.