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Generalized Hope, Expectancies, Locus of Control, and Spiritual Wellbeing in Relation to Quitting Smoking

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by

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Abstract

Conceptually, hope has long been acknowledged in theological and psychological circles as central to human motivation and behavior. However, empirical investigations of hope are relatively recent. The two major objectives of this dissertation were: 1) to investigate the relationship between hope and subsequent behavioral outcomes, and 2) to address this subject area in such a way as to contribute to the integration of psychological and biblically theological constructs that pertain to hope, expectations and behavior change.

Hope was operationalized as: "an expectation greater than zero of attaining a goal." Parallels between psychological and biblical perspectives were drawn in regard to: bases for hope; the process of building hope; and the role of hope.

An empirical investigation of hope's relation to behavior change was carried out as well. The Hope Index Scale (HIS) was administered to subjects entering a quit smoking program. Rotter's Locus of Control Scale and the Spiritual Wellbeing Scale (SWB) were also

administered. During treatment, daily measures of confidence of success and difficulty experienced in quitting were recorded.

HIS scores were significantly correlated with quitting smoking (r = .30, p< .05) and remaining a nonsmoker for 8 months (r = .43, p< .01). Internal locus of control was also significantly correlated with quitting (r = .29, p< .05). Feedback about HIS scores given to persons in the low and average hope groups prior to treatment was associated with paradoxical increases in subsequent self-reports of confidence of quitting smoking by the end of treatment. Consistent with the literature, daily measures of expectancy of successful outcomes showed positive correlations with actual outcomes. The SWB manifested significant correlations with the HIS and internal locus of control.

The implications of this study are: 1) hope is indeed a relevant factor in behavior change; 2) goal-specific expectancy measures taken during treatment are more predictive of outcome than those taken prior to, or early in treatment, however, a measure of generalized hope (HIS scores) appears to be a valuable pretreatment predictor of successful treatment; and 3)

biblical and psychological constructs can be addressed in the same arena thereby contributing to the ongoing process of integration.

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I thank Our Lord Jesus Christ for the opportunity to carry out this study on one aspect of the world that He has created. I pray that this dissertation will glorify Him and serve the purpose of His kingdom.

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Dedication

To Jean and Eugene Palmer, Sr. Your sacrificial giving thoughout my life, especially during my years in college and graduate school, are a testimony to which I return when I try to understand St. Paul's outline for building hope. Truly, you have persevered and demonstrated your proven character. The hope that is manifested in your lives is a monument to the love that Our Lord has shed in your hearts.

> "And not only this, but we also exult in our tribulations, knowing that tribulation brings about perseverence; and perseverence, proven character; and proven character, hope; and hope does not disappoint, because the love of God has been poured out within our hearts through the Holy Spirit who was given to us." (Romans 5: 3-5, NASB)

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CHAPTER I

INTRODUCTION

The relationships between internal states and behaviors have long been of interest to the psychological community. Issues such as; depression and suicide, anger and violence, and attitudes and altruistic behaviors have received much attention. This study will focus on hope. Frank (1968) has been a leading advocate of the notion that "hope" is one of the key curative factors in overcoming psychological difficulties. However, others (Betz, 1968; Wilkins, 1973) have questioned the validity of that notion. One of the chief purposes of this dissertation is to examine two operationalized measures of hope in order to determine their utility in predicting therapeutic gain. The other main purpose of this study is to contribute to the integration of psychological and theological constructs.

In the next section the basic issues of integration are presented. Following that section a number of other important issues will be discussed.

These include; a rationale for empirical study of hope, definitions of hope, a discussion of the processes and foundations that contribute to hope, and an examination of the role of hope. A review of the research literature on expectancies, hope, and hopelessness is presented to provide a background for the experimental investigation of hope presented later. As a precursor to that experiment, this chapter includes a discussion of the relevant aspects of cigarette smoking cessation techniques. This chapter concludes with a statement of the objectives and hypotheses of this experiment.

Issues of Psychological & Theological Integration

Many parallels exist between theological concepts and psychological concepts. Guilt, suffering, meditation, family life, joy and punishment are just a small sample of the topics addressed by the biblical authors as well as by psychologists. In this dissertation the concept of hope will be examined both theologically and psychologically.

Currently there is a movement among some conservative evangelicals to integrate psychology and theology in order to gain a more holistic view of man and his adjustment. A variety of approaches to this task have been taken some more productive than others.

Carter and Narramore (1979) have offered a helpful conceptualization of the various attitudes and techniques used to address this issue. They suggest that some are "Against" integration saying that the two fields are unrelated; others see certain aspects "Of" psychology or theology as relevant but that one need not organize a systematic approach to psychology and theology; others seem to acknowledge "Parallels" between psychology and theology, but argue that the two fields do not have an interrelationship; there are others who see the need for an "Integrates Model" because psychology and theology share a large common domain of inquiry.

Those who hold that a dialogue between psychology and theology is valid and that some form of integration is possible usually hold to the "unity of truth" assumption. This assumption is that all truths are noncontradictory. That is to say, nothing that is true will contradict any other truth. If a contradiction between truths appears, then the principle of noncontradiction dictates that one or both of the so-called truths is not true or that the contradiction is only an apparent contradiction and both truths can ultimately be shown to be compatible. With that

assumption, Christian psychological researchers have held that whether truth be found in the natural world or in the Bible, the sources of truth will not contradict each other. Listed below are the underlying assumptions held by the majority of integrators. These are the same assumptions underlying this dissertation.

1) The world exists and can be known.
2) Natural events are orderly and predictable or "lawful".
3) The scientific method is an effective method for knowing the world.
4) The Bible, in its original autographs, is the Word of God in propositional form. The currently existing manuscripts of the Bible constitute valid data for scientific investigation in the work of integration.

Without the first three assumptions, all scientific endeavors would be meaningless. The fourth assumption provides the basic motivation for integrating psychology and theology.

Larzelere (1980) proposed that there are 6 different levels at which integration can be done: 1)Worldview, 2)General proposition, 3)Linkage, 4)Specific propositions, 5)Hypotheses, 6)Data. Little practical work can be accomplished at the worldview and

general proposition levels because as Larzelere and others (Myers,1978) have noted, a person's underlying presuppositions control the ways in which new information and ideas will be interpreted.

At the other end of the integration continuum, Larzelere noted that most observers will usually agree at the data level, regardless of their presuppositions. Therefore, the majority of fruitful integrative work will take place in the remaining three levels. In this present study, these three levels: hypothesis, specific proposition, and linkage; will be the primary forum for integrative efforts.

The Legitimacy of Hope as a Topic for Investigation

Empiricists challenge the idea that a scientific investigation of hope can be conducted. They argue that it would have no more precision and validity than Wundt's examinations of consciousness by means of introspection (Marx & Hillix, 1980), because hope and hopefulness are only internal states that are ill-suited for objective measurement. However, Stotland has effectively argued that hope is a valid area of investigation. In the following dictionary definitions of hope he saw support for his view (Stotland, 1969, p.2):

"noun 1. Expectation of something desired; desire accompanied by expectation. 2. A particular instance of such expectation or desire; hope of success. 3. Confidence in a future event; ground for expecting something; "there is no hope of his recovery". 4. A person or thing that expectations are centered in; "the hope of the family". transitive verb. 5. To look forward with desire and more or less confidence. 6. To trust in the truth of a matter (with a clause): "I hope that you are satisfied". intransitive verb. 7. To have an expectation of something desired; "We hope to see you," "to hope for his pardon."

He used meanings one, two, five and seven as the basic definition for hope in his work. Stotland reasoned that since the definition is strongly cognitive, (ie. an expectation about goal attainment) it is as valid as other investigations of cognition. He also argued that hope has real-world applicability:

"...the expectation of attaining a goal is not the same thing, conceptually, as its desirability. Of course, it is possible and in fact, rather likely, that persons will believe success is more probable for a desirable event

> than for an aversive one. On the other hand, for most people and animals there are limits to the degree of distortion in favor of the probability of desired outcomes. If such distortion were so strong that there could be no meaningful distinction between expectation and desirability, the human race and lower species as well, would have died out long ago owing to lack of preparation for future states of hunger, cold and thirst" (pp. 2-3).

Accepting Stotland's view that hope can be a valid area of study for psychology, an important question remains in relation to this present study of hope. "What does Christianity have to say about hope?"

It can easily be shown that taking the doctrine or quality of hope from Christianity would radically change the nature of our religion. In I Peter 3:15 we see that believers are told to be ready to give a defense for the hope that they hold. The hope is of an imperishable and undefiled inheritance that will never fade away because it is in heaven (I Pet.1:3-4). This same hope is identified in Titus 1:2 ; 3:7; I Thess. 5:8; & Eph. 4:4.

What is Hope?

The dictionary definitions above give an indication of the mechanical aspects of hope, ie. hope typically involves a subject, at least one object and a verb that relates the two. An example of this is the statement: "I hope that I graduate from school this year." Hope can also involve a sequential relationship between a number of objects. A simple example is: "I hope that I get all my work done so I can hand in my dissertation so my committee can approve my work."

Psychological researchers have offered definitions of hope that are essentially compatible with Webster's. J. D. Frank (1968) suggested that hope is a "short-hand term for desire accompanied by expectation." Obayuwana (1980) described hope as "feeling that what is desired is also possible." Stotland (1969) defined hope as "an expectation greater than zero of achieving a goal."

Young's (1970) Analytical Concordance to the Bible includes the following cognate ideas of hope: wait for, trust, lean on, expect: n. confidence, expectation, etc. The Interpreter's Dictionary of the Bible (Buttrick, 1962, p. 641) shows the Old Testament concept of hope to be multifaceted: 1) Trust in God, which led to a commitment of one's cause to Him and

living in serenity and peace under his protection. (This definition is rarely used today however); 2) A ready eagerness to take refuge in the Lord from one's foes and to rely on Him for speedy deliverance; 3) The confident expectation of future gladness which creates the possibility of present rejoicing (as in the hope of immortality); 4) a patient and courageous waiting for the Lord to bring His salvation, bringing endurance in the face of present adversity

There are others who have attempted to portray hope's meaning in a less technical fashion in order to convey what might be called a fuller or deeper understanding of the concept.

> "Hope is paradoxical. It is neither passive waiting nor is it unrealistic forcing of circumstances that cannot occur. It is like the crouched tiger, which will jump only when the moment for jumping has come... To hope means to be ready at every moment for that which is not yet born, and yet not become desperate if there is no birth in our lifetime. There is no sense in hoping for that which already exists or for that which cannot be" (Fromm, 1974, p. 9).

G. F. Watts portrayed hope in an allegorical picture form in which a blindfolded lady stands atop a rolling world as she bends over to play her broken lute that has only one string remaining (Moule, 1953).

It is interesting to note that Webster's (1979) dictionary suggested that the original meaning of the word might have meant "to leap up with expectation", ie. to hop. Here the motivational aspects of hope are alluded to.

Among these various attempts to capture the meaning of hope it is apparent that hope is an internal cognitive state. Hope is largely cognitive because expectations are cognitive in nature. However, another aspect also becomes apparent. Hope can be a generalized state of mind or it can be situation-specific. One can expect a particular desired goal to be achieved or one can harbor hopes that life in general will be good. In other instances it is possible to have a combination of both generalized hope and goal-specific hope. For example, "I hope that the course of my life will be happy and fulfilling and that will involve a family and adequate income" or "I hope that I have a family and adequate income so that my life will be happy and fulfilling." While the validity of the relationship

between possessions, family and happiness in this example might be challenged, the underlying principle that cognitions are often linked in such fashion, either from the general to specific or vice versa remains.

Stotland (1969) addressed the nature of hope in the form of 7 propositions:

Proposition I: An organism's motivation to achieve a goal is, in part a positive function of its perceived probability of attaining the goal and of the perceived importance of the goal.

Proposition II: The higher the organism's perceived probability of attaining a goal and the greater the importance of that goal, the greater will be the positive affect experienced by the organism.

Proposition III: The lower the animal's perceived probability of attaining a goal and the greater the importance of that goal, the more will the organism experience anxiety.

Proposition IV: Organisms are motivated to escape and avoid anxiety; the greater the anxiety

experienced or expected, the greater the motivation.

Proposition V: The organism acquires schemas as a result either (1) of his perception of a number of events in which examples of the same concept are associated; or (2) of communication from other people.

Proposition VI: A schema is invoked by the organism's perceiving an event similar to a constituent concept of the schema or by the individual's receiving a communication from another directing him to invoke the schema; the greater the similarity between the event and the constituent concept, or the greater the importance of the person directing him, the more likely is the schema to be aroused.

Proposition VII: The probability that a schema will be invoked and remain aroused is, in part, a positive function of the number of times that it has been invoked previously; of the number of events previously perceived as consistent with the schema; of the importance to the organism of the person, if any, from whom one acquired the schema (pp. 7-12).

Up to this point in our discussion, the emphasis has been on the cognitive aspects of hope. However it is apparent from Stotland's formulation as well as from common experience, that affect and behavior are concomitants of hope which also deserve attention. We know that goals are intimately related to emotions and behavior. Consider, for example the affective and behavioral responses of a home team crowd as they watch their football team move toward their opponent's goal line.

In his seven propositions, Stotland addressed the three basic realms of psychological inquiry: cognition, behavior and affect. Hope is a perceived probability of attaining a goal (Prop. 1). The degree of hope will influence a person's affect (Props. 2, 3, 4) and behavior (Prop. 7). When an individual has little hope of attaining a goal he will have little motivation for continuing goal directed behaviors (Props. 4, 6). A person's degree of hope about a particular goal is influenced by previous experiences with similar goals and by significant others (Props. 5, 6, 7).

Foundations of Hope

Some people are more optimistic than others. It seems that regardless of the situation, certain

individuals are confident of success whereas others report that they expect to fail. Two people could be faced with the same complex set of problems yet their estimations of their chances to overcome the problem might differ greatly. In part, the difference could result from past experiences with situations that were somehow similar to the present set of problems (Bartlett, 1932). The difference could be attributed to individual personality traits or to intelligence or to differing perceptions of what the problem involves. The question is: "Upon what foundation(s) do people base their hopes?"

Obayuwana and Carter (1982) proposed that hope can be viewed as a generalized state resulting from 5 sources: ego strength, perceived family support, religion, education, and economic assets. They contend that these dimensions are common to all people. The degree or amount of each dimension will determine the person's overall state of hopefulness. These five sources are seen as the foundation for hope in their model.

The Bible also discusses the basis or foundation for an individual's hope. One of the best examples of hope's foundation is seen in I Peter. The Apostle

devoted the first half of his letter to describing all that is involved in being a believer. He explained the process by which they were chosen, sanctified and blessed. He informed them regarding their inheritance and the responsibilities that accompany it. All of these teachings form a sound foundation for hope. It is only after this recitation that he asks his readers to be ready to give a defense for the hope they held (I Peter 3:15).Such a defense could be made because the author had just given them a comprehensive outline of the evidence which was the foundation or reason they had hope.

In a much briefer fashion, Jesus alluded to the expectations people could have about the future through his parable of houses built either on rock or sand (Matt.7:24-27). His point was that with his words as the foundation for living, an individual could expect a stable and more desirable life outcome. But those who embrace other foundations for living could expect disastrous results.

Moule (1953) has compiled the following list of other foundations mentioned in the Bible: foreign allies (Isa. 20:5); riches and gold (Prov. 11:28); dwellings (Job 18:14); horses (Isa. 30:16); men (Jer.

17:5); princes (Ps. 146:3); empires and armies (Lam. 4:17); lies (Isa. 28:15); wickedness (Ps. 62:10); sorceries (Isa. 47:9-15); idols (Ps. 115) and the Temple itself (Jer. 7:1-7).

The foundation or evidence upon which a person relies is crucial in regard to the appropriateness of their hope. Return to the example of the two people facing the same set of problems. If the more optimistic person believes he will succeed because he has just eaten his favorite breakfast cereal, his confidence is almost certainly unjustified. However if he is more optimistic because the situation is perceived as one which involves tasks he knows he is capable of doing, then his confidence is appropriate.

Whether hope is based on internal sources (eg. ego strength) or external sources (eg. economic assets) or upon a combination of sources, there is always some foundation for hope. The quality and relevance of the foundation to the goal at hand are crucial determinants of the validity of an individual's hope.

Developing Hope

If people typically require a foundation or basis for hope, the question is "How does one come to hope?" The following Pauline formulation expresses it well.

> "And not only this, we exult in also our tribulation, knowing that tribulation brings about perseverance; and perseverance, proven character; and proven character, hope; and hope does not disappoint...." (Romans 5:3-5a).

In the passage above Paul presented a one-sentence propositional formula for building hope. Albert Bandura's (1977) theory of "self-efficacy" shares some common elements with the progression that Paul gave. Self-efficacy is an individual's evaluation of his/her capacity to bring about intended results. The theory posits that increasing expectations of self-efficacy will influence the person's selection of activities and behavioral settings. Other effects will be: an increase in the duration and intensity of striving for a goal, different reactions to barriers and negative feedback and to other response costs (Rosenthal & Bandura, 1978).

Rosenthal and Bandura (1978) described four sources of information which contribute to expectations of self-efficacy: 1) personal mastery experiences; 2) vicarious experiences where the coping and/or success of another individual is observed by the individual; 3) various forms of verbal and social

persuasion; and 4) states of physiological arousal from which people make judgments as to their anxiety level and vulnerability. Considerable empirical evidence confirming the validity of these sources has been gathered (Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977; Bandura, Jeffery, & Gajdos, 1975; Bandura Jeffery, & Wright, 1974).

Rosenthal and Bandura (1978) saw personal mastery experiences as the most potent influence upon self-efficacy. If expectations of self-efficacy are equated with hope it can be argued that first hand experiences with the goal are the best means of building hope. Such a conclusion is related to Seligman's (1975) work on "learned-helplessness", ie. personal failure experiences are very potent contributers to hopelessness.

Lazarus (1981) contends that a sense of hopefulness can be raised during the course of an initial psychotherapy interview. By discussing each step of a very difficult task with a client, Lazarus leads the person through a series of success experiences by way of their imagination.

In relation to Obayuwana and Carter's (1982) theory on the sources of hope, it can be argued that

those sources are collections of success experiences. For example, the education dimension can be described as successive promotions to higher grade levels after demonstrating one's abilities. Perceived family support, in part, can be described as the result of past experiences in which family members were supportive. Ego strength, religion and economic assets could also be described in terms of favorable outcome experiences.

From a psychodynamic perspective, Erikson (1964) proposed that hope is the virtue that results from successful progression through the first stage of psycho-social development. He posited that a healthy balance between trust in the maternal nurturing parent on one hand and mistrust in other environmental factors which are not healthy or good on the other hand, will result in the virtue of hope. He labeled this stage "Basic Trust vs. Basic Mistrust". He also noted that during subsequent development the things for which a child hopes may change, but the virtue (ie. the ability to hope) is the product of this very first stage.

For Erikson, hope is a generalized virtue or character trait. Whereas Bandura and Rosenthal's (1978) concept of "expectation of self-efficacy" is a hope

about a specific goal or event. These two conceptions are not necessarily mutually exclusive. In fact, Erikson's generalized virtue of hope can be seen as the product of the many individual expectancy experiences that a person has. In essence, Erikson's is a molar model of hope while Bandura and Rosenthal's is a molecular model.

The common feature among these various authors is the recognition that hope is built through a process. It results from experience and perception over time. Hope is not a static quality. An individual's sense of hopefulness results from a complex interaction between the individual and their world. Indeed, hope can either wax or wane.

In a later section a review of the literature on patient expectancies and outcome is presented. However at this point it is instructive to look at an unsuccessful attempt to build hope. Imber, Pande, Frank, Hoehn-Saric, Stone, and Wargo (1970) attempted to instill "hope for improvement" by informing patients that on the basis of some physiological tests they were likely to experience improvement within four weeks. Actually the test to which the investigators referred were known by the investigators (but not the patients)

to have no predictive value. The results of the study showed no significant difference between the experimental and the control group. The investigators concluded that patient's expectations are not easily changed.

The conclusion drawn by Imber, et al. might be true, ie. expectations are difficult to change, but we should recognize that the evidence offered by the investigators was not sound. The physiological testing was known by the investigators to be unrelated to the probability of improvement. Thus it should once again be emphasized that the foundation upon which hopes are based must be relevant and believable to the subject if they are to be of influential value. Imber et al.'s conclusion also implies that if the patients' expectations had been changed they would have shown a significant improvement over the control group. Such conclusions, drawn from negative results are clearly speculative.

Role of Hope

Practitioners from a variety of fields are giving greater attention to the concept of hope. From the handling of everyday tasks to overcoming extreme psychological hurdles to battling life-threatening

diseases, hope is increasingly regarded as a key factor.

Achterberg, Simonton and Simonton (1976) have argued that the psychological state of cancer patients can significantly influence the course of the disease. They believe that an attitude of hope may activate immune mechanisms via the endocrine system, thereby increasing prospects for recovery.

Engel (1968) has described the rapid deterioration of individuals who have lost their sense of hope. He calls it this phenomenon "the giving up - given up complex." This complex is frequently reported to have preceeded the onset of disease or of sudden death.

Beck, Weissman, and Lester (1974) have identified hopelessness, a quality distinct from depression, as a key factor in prediction of suicidal ideation and suicide attempts. They developed a 20-item Hopelessness Scale to measure this dimension. Schotte and Clum (1982) found a significant relationship between suicidal ideation and hopelessness among college students. Suicidal intent among psychiatrically disturbed inpatient children was also found to be related to hopelessness (Kazdin, French, Unis, Esweldt-Dawson, & Sherick, 1983).

As mentioned earlier, Lazarus (1981) sees a need for a sense of hope in the very beginning of psychotherapy. Frank (1976) ties success of therapy to the counselor's ability to overcome the client's sense of isolation, helplessness and hopelessness. Returning to Stotland's (1969) propositions, hope is a necessary condition for action. Without this type of expectation, people will discontinue goal directed behaviors. All of these authors see behaviors, cognitions and affect being influenced by a person's state of hope.

Psychotherapists actively espousing a Christian perspective (Nichols, 1983; and Vande Kemp, 1984) openly acknowledge the need for hope in counseling and psychotherapy. While there may be some debate about how hope is to be instilled (Vande Kemp, 1984) and whether mediating objects of hope are legitimate for Christian therapists to endorse (Myers, 1980) there is general agreement that hope, a confident expectation of the future, is essential to effective therapy.

The Bible gives evidence for the role and utility of hope in the experience of the believer. Some members of the church at Thessalonica were apparently worried that believers who had died might not participate in the Kingdom upon Christ's return (see I Thess.4:13-18).

Paul explained to them that only non-believers who had died without Christ were without hope. The apostle attempted to teach them the difference between those who had hope and those who didn't have hope. He did this so the Thessalonian Christians would not "grieve" for those who had died as Christians as they should for those who had not trusted Christ. This information regarding hope was intended to have an emotional influence upon the audience, ie., that they not grieve. This information was also likely a comfort to those who feared they might still die before their Lord's return.

The Apostle Peter associated hope with thoughts and behaviors: "Therefore gird up your minds for action, keep sober in spirit, fix your hope completely on the grace to be brought to you at the revelation of Jesus Christ"(I Peter 1:13). A sober spirit and a mind ready for action are set in the context of having hope (or expectation) focused on the grace that would come at some future time.

Peter's epistle can be explained in the following manner: He gave believers an exhortation to live their lives in a certain fashion. They were to do certain things and they were not to do other things. In essence, they were to exercise self-control. However,

he did not leave his audience without an explanation or rationale for exercising such self-control. Their hope was to be fixed on a future event. That is to say, they had an expectation of the future which made their present situation more bearable. The hope of the future was the motivator for the present. In addition, Peter made it clear that God had already done many things to warrant their obedience (1:14). He reminded them of God's past reliability. Thus, he was offering a very sound foundation for hope.

Review of Expectancy Research

As mentioned before, Stotland defined hope as an expectation. Considerable research has been conducted to determine the relationship between clients' expectations of improving during psychotherapy and the actual realization of those expectations in psychotherapy. Wilkins (1973) and Lick and Bootzin (1975) have reviewed the studies and have found mixed evidence for the utility of using client expectations for predicting successful therapeutic outcome.

Wilkins found six studies that showed a positive relation between client expectations and some measure of outcome (Krause, Fitzsimmons & Wolfe, 1969; Leitenberg, Agras, Barlow & Oliveau, 1969; Marcia,

Rubin & Efran, 1969; McGlynn, Mealiea & Nawas, 1969; McGlynn, Reynolds & Linder, 1971b; Oliveau, Agras, Leitenberg, Moore & Wright, 1969; and Oliveau, 1969) and seven studies that showed no such relation (Bednar & Parker, 1969; Grosz, 1968; Imber, Pande, Frank, Hoehn-Saric, Stone, & Wargo, 1970; Krause, 1968; McGlynn & Mapp, 1970; McGlynn, Reynolds & Linder, 1971a; and Sloane, Cristol, Peppernik, & Staples, 1970). In studies by Marcia, Rubin, and Efran, (1969) and McGlynn and Williams (1970) groups that received high-expectancy instructions showed slightly less improvement than groups receiving low or no expectancy instructions.

However, the mere number of studies does not reflect the whole picture. Wilkins also pointed out methodological problems in those studies which had positive results. First they were mostly self-report measures of expectancy and outcome. Second, therapists were not blind to the expectancy conditions as they were in the studies which had no significant results. Wilkins also warned that expectations of improvement should not be misconstrued as the cause of improvement when those expectations happen to correlate with actual outcome. He compared such reasoning to the assertion

that one's expectation of rain is the cause of rainfall after seeing lighting and clouds and hearing thunder.

Lick and Bootzin's (1975) review offered a slightly more positive assessment. Their research was related to the treatment of fears in therapy. The two major comparisons they considered were: 1) those that examined the relative efficacies of systematic desensitization versus placebos, and 2) those that attempted to manipulate subjects' expectations of therapeutic gain within a particular treatment modality. They pointed out serious methodological problems such as: 1) failure to "evaluate the experiential impact of expectancy-inducing instructions;" 2) use of unconvincing placebo conditions; and 3) use of only mildly fearful, poorly motivated subjects, ie., usually "normal" college students in analogue studies.

Despite these limitations, they stated that although the methodological problems of previous research "preclude firm empirical conclusions about the importance of therapeutic instructions in systematic desensitization..., the available data do suggest that these influences are sizable" (Lick & Bootzin,1975). They suggested four possible mechanisms to explain the

influence of expectancy of therapeutic gain: 1) an increase in compliance with real treatment procedures; 2) "increased tendency to test reality after having undergone an `effective' therapy, with subsequent fear extinction and self-reinforcement for behavioral improvement;" 3) changed demand characteristics after the treatment; and 4) changes in cognitive events that control fear responses.

Other reviewers of the literature in this area pointed out needed changes for future research. Perotti and Hopewell (1976) note that a differentiation must be made between two types of outcome expectancy, ie., initial expectancy which the client has at the beginning of therapy with regard to probable success of therapy and expectancy during the course of treatment. Kazdin and Wilcoxon (1976) identified a need for control conditions to have just as great expectancy as treatment condition.

Problems In Quantifying Hope & Hopelessness

As mentioned earlier, there is substantial evidence to suggest that hopelessness is closely related to suicidal ideation and suicidal attempts. However, some concern has been expressed that Beck's measure of hopelessness is strongly contaminated by

social desirability (Linehan & Nielsen, 1983). While this concern has been raised, Petrie and Chamberlain (1983) found no influence upon hopelessness by social desirability as measured by the Crowne-Marlowe Scale. The debate now centers around which measure of social desirability is used. Strosahl, Linehan, and Chiles (1984) found a significant relation between Beck's Hopelessness Scale and the Edwards Social Desirability scale. Strosahl, et al. now contend that both Beck's and Edwards' scales should be used to make the best assessment of suicide risk.

Hope and Self-control

One great interest in the concept of hope is that it may have some behavioral and affective manifestations. Stotland argued that it does have real-world applicability. St. Peter encouraged his readers to exercise self-control on the basis of their hope. Bandura's work suggests that hope about oneself, expectations of self-efficacy, will influence behavioral and motivational states.

To investigate the relationship between hope and self-control the current experimental study was conducted to examine the relationship of hope to quitting smoking. In preparation for consideration of

that experiment, a brief review of the literature on cigarette smoking behavior and cessation techniques is in order.

Cessation Strategies for Cigarette Smoking

In this section a brief overview of smoking cessation techniques is presented. For more complete reviews of the literature on the modification of smoking behavior see Bernstein's (1969) and Bernstein and McAlister's (1976) works. Ashton and Stepney (1982) describe cigarette smoking as a complex learned behavior. Both classical and operant conditioning appear operative in some aspects of smoking behavior. Partial and secondary reinforcement phenomenon have also been identified. Solomon's (1980) recent advancement of the Opponent - Process Theory appears to have considerable explanatory merit regarding smoking. Essentially, the theory states that smoking moves from being a pleasure seeking behavior to an aversion avoidance behavior as the smoker's brain builds up a tolerance to the effects of nicotine.

Techniques for helping people quit smoking have taken many forms. Ashton and Stepney (1982, p. 162) have identified the following three major groups of treatments: 1) Behavior therapies; aversive

conditioning (electric shock, rapid smoking), operant conditioning, systematic desensitization & relaxation, programmed smoking, contract management. 2) Drugs; lobeline, tranquilizers and antidepressants, nicotine. 3) Smoking clinic and other treatments; psychotherapy, group support, information, sensory deprivation, hypnosis, acupuncture.

Among these various techniques, cessation rates have ranged from 12 to 40% in followups typically conducted 6 months after treatment.

McFarland, Gimble, Donald, and Folkenberg (1964) identified the "Five-Day Plan" of the Seventh Day Adventist Church as one of the earliest clinic-type approaches to cessation. Claims of 70 - 80% abstinence after 5 days and 30% abstinence at three months were made by McFarland, et al., but others (Riches, 1978) have challenged those numbers. Since the advent of the 5-Day Plan numerous variations have been devised in other smoking clinics. The basic ingredients of the plan include: information about smoking and exhortation, combined with advice about diet, physical exercise, and change of social activities over the initial period of abstinence, invoking a Power greater

than man, informal group discussion and a buddy system of supportive pairs.

Objectives of the Study

One objective of this study was to determine whether a generalized measure of hope, such as discussed by Obayuwana and Carter (1982) and/or a specific measure of hope, the subject's self-report of confidence regarding quitting smoking have predictive value. That is, do measures of hope predict success at self-control?

Another objective of the study was to determine whether giving true feedback regarding one's hope score prior to treatment would facilitate self-control. Lick and Bootzin (1975) have concluded that there is evidence to suggest such a relationship.

Perotti and Hopewell's (1976) call for measurement of "pre-treatment" and "during-treatment" expectancies of therapeutic gain led the investigator to take daily measures of expectancies and two other variables during the course of the treatment period.

In addition, the study examines the relationship between locus of control (internal vs. external) and becoming a non-smoker. This relationship was examined because of Schachter and Gross' (1968) findings that

obese individuals, presumably another group with self-control problems, were more prone to respond to external cues than normals. Best and Steffy's (1975) research suggests that there might be differential effects because internals have tended to respond better to aversion types of therapy whereas externals have responded better to an agent who decided the rate at which smoking would be reduced.

The relationship between Obayuwana's Hope Index Scale (HIS) and a recently developed measure of religiosity called the Spiritual Well-being Scale (Paloutzian & Ellison, 1979) was also examined in this study. It was reasoned that administration of the two instruments could further test the religious component that Obayuwana, et al. say contributes to hope.

Hypotheses

1: Hopefulness, as measured by the Hope Index Scale (HIS) will be positively related to graduation from the Smoke Free Program.

2: Initial self-reports of confidence, as measured by a Likert type scale at the introductory meeting, will be positively related to graduation from Smoke Free.

3: Self-reports of confidence during the treatment period will have increasing predictive value as the treatment moves toward completion.

4: HIS scores will be positively related to non-smoking behavior when an 8-month follow up of subjects is conducted.

5: Internal locus of control, as measured by Rotter's I-E scale, will be positively related to graduation from Smoke Free.

6: Internal locus of control, as measured by Rotter's I-E scale, will be positively related to nonsmoking 8 months after the completion of of Smoke Free.

7: Subjects in the high-hope group who receive feedback regarding their HIS scores prior to the onset of treatment will manifest higher confidence in the early days of treatment than those in the same group who do not receive feedback.

8: Subjects in the low-hope group who receive feedback regarding their HIS scores prior to the beginning of treatment will manifest lower confidence of quitting in the early days of

treatment than those of the same group who do not receive feedback.

9: Spiritual well-being, as measured by the Spiritual Well-being Scale (SWB) will be positively related to HIS. scores.

10: Internal locus of control will be positively related to HIS scores.

CHAPTER II

METHOD

Subjects

Fifty two adults from the Portland metropolitan area served as volunteer subjects. All of the subjects were at a private hospital attending a class for quitting smoking.

Instruments

Hope Index Scale. The Hope Index Scale (HIS) contains 60 yes or no questions. The instrument consists of five subscales: Ego Strength; Human Family Support; Religion; Economic Assets; and Education. Ten questions are devoted to each of the five scales. The remaining ten questions constitute a validity measure. The questions are distributed randomly.

Obayuwana, Collins, Carter, Rao, Mathura and Wilson (1982) have tested the HIS with over 3000 subjects. Significant differences were found between controls (medical students) and the experimental subjects (a psychiatric population). Controls were found to have the highest scores, with depressed non-

suicidal patients next and suicidal, depressed patients scoring the lowest. A correlation of $r = -.88$, $p<.001$ was found with Beck's Hopelessness Scale (Beck, Weissman, & Lester, 1974). The HIS has been shown to be internally consistent, with an alpha coefficient value of .61 at the .01 level.

Spiritual Well-being Scale. The Spiritual Well-being Scale (SWB) contains 20 items: 10 with reference to God for the Religious Well-being subscale (RWB) and 10 items without reference to God which constitute the Existential Well-being Scale (EWB). In order to control for response set problems, half of the items from each subscale are worded positively and the other half are worded negatively. The correlation between RWB and the EWB subscales is $r = .32$ ($p<001$). Test-retest reliability coefficients are: .93 (SWB); .96 (RWB); .86 (EWB). Alpha coefficients reflecting internal consistency are: .89(SWB); .87 (RWB); and .78 (EWB). The magnitude of the coefficients suggests that the SWB Scale and its subscales possess high reliability and internal consistency (Paloutzian & Ellison, 1982).

Rotter's I-E Scale. Rotter's Internal vs External Locus of Control Scale was designed to assess an individual's expectations about how reinforcement is

controlled. It is a 29-item forced choice test. On each item the subject is required to choose between two statements, selecting the one that they "more strongly believe to be the case" for themselves. Twenty-three of the items consist of one internal reinforcement statement and one external reinforcement statement. The remaining 6 items consist of statement pairs which Rotter referred to as "fillers". These fillers were added to make the purpose of the test "somewhat more ambiguous" (Rotter,1966). The test is scored by adding the total number of external statements that the subject has selected.

Internal consistency measures have ranged from r = .65 to r = .79. Split-half reliability was r = .65. Spearman-Brown tests ranged from r = .73 to r = .79. The Kuder-Richardson tests have yielded correlations from r = .69 to r = .76 (Rotter, 1966). Test-retest reliability has ranged from r = .49 to r = .83 (r = .49 was found in a 2-month follow up, the lowest correlation for one month follow up was r= .72). Rotter (1966) stated that every effort was made to reduce the correlation between this scale and the Marlowe-Crowne Social Desirability Scale as well as measures of intelligence and gender. However, there appeared to be

a significant difference between whites and negroes on this scale. Whites were significantly more internal. One criticism of the I-E scale is the charge that it is not unidimensional. Levenson's (1972) review of the literature indicated that it did contain several distinct factors. However, Fink (1983) has argued that its "multidimensionality does not invalidate the concept of generalized expectancy."

Procedure

Three days prior to the quitting day for the Smoke Free program an introductory/informational meeting was held. The overall purpose, objectives and format of the program were explained. Those who wished to enroll were invited to do so that evening. (See Appendix A for outline of the Smoke Free program).

In the last 15 minutes of the 2 hr. meeting the investigator was introduced to the audience. He explained his interest in studying some of the factors which might be involved in quitting smoking. He then asked the Smoke Free class to help in the study by completing several questionnaires and keeping track of some of their feelings during the course of the program. Appendix B gives the text of the investigator's message to the class.

Each person who agreed to participate was given a packet which included an identification number, a participation agreement (Appendix C); smoking history questionnaire (Appendix D); a Spiritual Well-being Scale (Appendix E); Rotter's I-E Scale (Appendix F); Hope Index Scale (Appendix G); and a background information sheet (Appendix H). None of the scales were labeled. Subjects completed the questionnaires before leaving the meeting. Twenty nine people out of a class of approximately 50 volunteered from the September, 1983 class. An additional 23 volunteered from the November, 1983 class to complete the sample.

The participation agreement was the only document that participants completed which had both their name and identification number. The names and identification numbers were then arranged into a key.

All of the Hope Index Scales were scored the day after the initial meeting. Subjects were divided into 3 groups of approximately equal size, according to their HIS scores, ie. High Hope = or > 350; Average Hope from 310 to 340 ;and Low Hope = or < 290 . Half of the subjects from each of the three groups were randomly selected to receive feedback regarding their scores on the HIS.

At the next meeting, ie. "quitting cold turkey," those subjects who were selected to receive feedback picked up an envelope with their name on it as they entered the meeting room. Within the envelope was one of three messages that corresponded to their Hope group placement. The messages to subjects selected for feedback can be seen in Appendix I.

At each of the 5 consecutive evening meetings and at the "Relapse Prevention" meeting 4 days later, each subject reported his or her degree of confidence regarding quitting on a 7-point Likert type scale. Subjects also reported the degree of difficulty experienced during that day also on a 7-point Likert type scale. On the same sheet they were to report the number of cigarettes they had consumed since the previous meeting. (See Appendix J for daily report forms with Likert type scales.) When subjects missed one of the sessions their Daily Report data was not collected for that session.

Graduation from Smoke Free was granted to all subjects who reported that for a minimum of 7 consecutive days immediately prior to the graduation night they had completely abstained from smoking.

Eight months after the Graduation Night a telephone survey was taken of all subjects to determine their current smoking status. (See Appendix K for followup questionnaire.)

A letter was sent to those subjects who indicated that they were interested in the results of the study. The letter contained the subject's individual scores as well as the range of scores obtained by the class. Appendix L contains that letter.

CHAPTER III

RESULTS

This chapter presents the statistical findings concerning the hypotheses posited in chapter one. Additional statistical analyses were conducted to answer other relevant questions.

At the end of the introductory sessions of the Smoke Free Program a total of 52 subjects completed questionnaire packets. However, only 45 subjects actually entered treatment 3 days later on the first night in which they were to stop smoking. Therefore data from the 7 subjects who did not enter the treatment condition were excluded from analysis.

Certain pairwise comparisons were conducted with less than 45 cases because some data was missing from subjects for various reasons (eg. absence from one or more treatment meetings, failure to provide all demographic information, unscorable responses to a particular test, etc.). The degrees of freedom for all Pearson correlations was 43 unless otherwise noted. Appropriate levels of significance were selected for

each comparison as dictated by the degrees of freedom allowable.

Appendix M presents the correlation matrix of the Pearson Product Moment Correlation Coefficients which were calculated for all of the linear measures taken in this study. (Hypotheses 1, 2, 3, 4, 5, 6, 9, and 10).

Crosstabulations with Chi Square tests of significance were conducted for nominal measures that did not lend themselves to analysis by the correlation method. These include: The relation of feedback to graduation within the various hope groups; the relation of marital status to graduation and nonsmoking at the followup; the relation of income to graduation and nonsmoking at the followup; and the relation between previous number of attempts to quit and graduation.

Multiple regression analyses with repeated measures were carried out to examine how daily reports of degree of confidence of becoming a nonsmoker, degree of difficulty experienced in quitting smoking on a particular day, and the number of cigarettes smoked on a particular day during treatment, related to graduation from Smoke Free.

A 2 by 3 ANOVA as well as one-way analyses of variance (ANOVA) were conducted to test how daily

measures of confidence varied within the three hope groups as a function of whether or not subjects received feedback about their HIS scores (Hypotheses 7 and 8).

The results of the statistical analyses that are germane to the major questions of this dissertation are presented in the body of this chapter. Appendices L - R contain a complete presentation of these analyses as well as all other statistical analyses that were carried out for this dissertation. These other analyses are not presented in this chapter because most were not significant and they were deemed to be only tangentially related to the main purpose of the study.

Subject's Descriptive Statistics

The sample consisted of 21 males (46.7%) and 24 females (53.3%). Subject's mean age was 37.09, S.D. 10.26. The subjects' mean years of education was 13.25, S.D. 1.75. The two tables that follow present frequencies for marital status and income ranges for the subjects in this study.

Table 1

Subjects' Marital Status

Marital Status	Frequency	Percentage
never married	6	13.3
married	26	57.7
divorced	11	24.4
widowed	1	2.2
living as married	1	2.2
	45	100.0

Table 2

Subjects' Income

Income Ranges ($)	Frequency	Percentage
less than 5000	2	4.4
5000 - 9999	3	6.7
10000 - 14999	8	17.8
15000 - 19999	12	26.7
20000 - 29999	11	24.4
30000 - 49999	6	13.3
more than 50000	3	6.7
	45	100.0

Results by Hypothesis

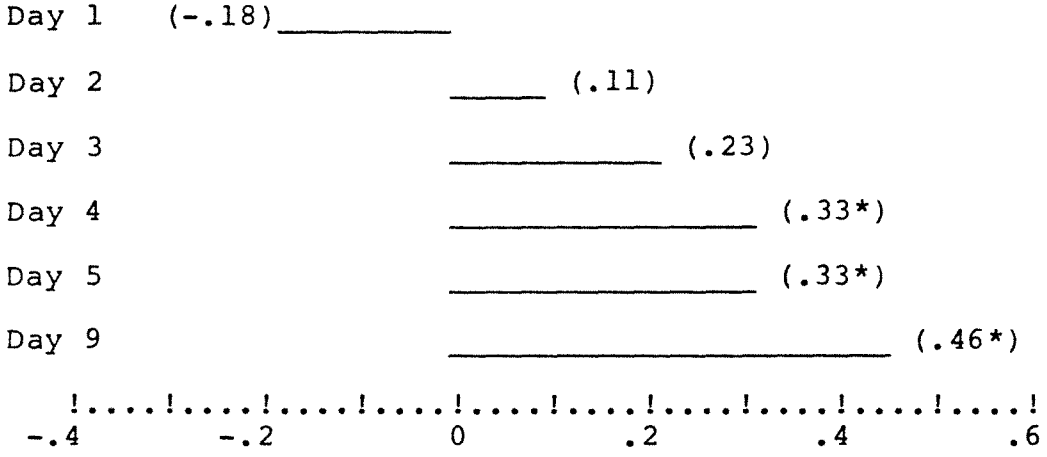
1. Hypothesis 1 was confirmed. HIS scores were significantly related to success in quitting smoking as measured by graduation from Smoke Free ($r(42) = .30$, $p<.05$, one-tailed.)

2. Hypothesis 2 was not confirmed. Initial self-reports of confidence of becoming a nonsmoker, as measured by a Likert type scale at the introductory meeting, were not significantly related to graduation from Smoke Free ($r(42)= .20$).

3. Hypothesis 3 was confirmed. While self-reports of "confidence of quitting" on days 1, 2 and 3 were were not significantly related to treatment outcome, correlations for days 4, 5, and 9 were significant at the .01 level. Figure 1 is a bar graph illustration of the correlations between daily self-reports of confidence and graduation from Smoke Free.

Figure 1

Correlations between "confidence on becoming a nonsmoker" and graduation



* indicates significance at .01 level.

4. Hypothesis 4 was confirmed. HIS scores were significantly related to nonsmoking at the end of 8 months (r=.43, p<.01, one-tailed). There was also a significant relation between HIS scores and the number of cigarettes smoked at the 8 month followup (r(41)= -.41, p<.01, one-tailed).

5. Hypothesis 5 was confirmed. Internal locus of control was significantly related to graduation from treatment (r(42)= .29, p<.05, one-tailed).

6. Hypothesis 6 was not confirmed. Internal locus of control was not significantly related to nonsmoking at the 8 month followup mark (r= .18).

7 & 8. Hypotheses 7 and 8 were not confirmed. Subjects in the high hope group who received feedback regarding their HIS scores prior to treatment did not manifest significantly higher measures of confidence than those in the high hope group who did not receive feedback regarding their scores. In addition, subjects in the low hope group who received feedback regarding their HIS scores prior to treatment did not manifest significantly lower measures of confidence on any days of treatment than those in the low hope group who did not receive feedback regarding their HIS scores.

A 3 by 2 ANOVA, including hope groups by feedback of HIS scores with repeated measures of "confidence of quitting smoking" for treatment days 1 through 5 yielded significant interaction effects on days 2 and 3. Tables 3 and 4 present the statistical results from those two days. Unfortunately, limitations of the computer program used for this analysis precluded tests between each of the cell means. Thus, while interaction effects were found, the specific interactions were not identifiable. Appendix N contains

the ANOVA and one-way ANOVA statistics employed to approach this question.

Table 3

ANOVA results for Day 2's confidence for hope group by feedback

Source of Variation	DF	F	Significance of F
Main Effects	3	3.15	.038
Hope group	2	2.02	.149
Feedback	1	3.59	.027
2-way interaction	2	2.53	.015
Explained	5	3.81	.008

Table 4

ANOVA results for Day 3's confidence for hope group by feedback

Source of Variation	DF	F	Significance of F
Main Effects	3	.78	.517
Hope Group	2	.59	.562
Feedback	1	1.15	.291
2-way interaction	2	2.44	.035
Explained	5	1.96	.112

In light of the computer program limitations, a less appropriate method was carried out to approximate the desired information. The hope groups were analyzed separately with one-way ANOVAs being used to compare the means of those who received feedback with those who did not. In the high hope group the one-way ANOVA revealed that means for subjects who didn't receive feedback, consistently manifested higher confidence of becoming a nonsmoker, although none of the comparisons reached a significant level. Table 5 presents the one-way ANOVA findings for the High Hope group.

Table 5

One-way ANOVA results for Confidence Measures in the High Hope Group

Day	N	Feedback	Conf	DF	F ratio	p<
1	9	no	5.77	1	.06	.919
	7	yes	5.71			
2	9	no	6.44	1	.55	.469
	7	yes	6.14			
3	8	no	6.50	1	1.54	.236
	7	yes	5.71			
4	9	no	6.55	1	2.08	.172
	6	yes	5.33			
5	9	no	6.33	1	.90	.359
	7	yes	5.57			
9	8	no	6.12	1	.15	.707
	6	yes	5.83			

In the low hope group, the one-way ANOVA revealed that subjects who received feedback regarding their HIS scores manifested a significantly higher mean measure of confidence on days 2 and 4 than those who did not

receive feedback. Table 6 presents the data for the one-way ANOVA that was conducted on the Low Hope group for all six days of treatment.

Table 6

Oneway ANOVA results for Confidence Measures in the Low Hope Group

Day	N	Feedback	Conf	DF	F ratio	p<
1	7	no	6.00	1	1.91	.200
	4	yes	6.75			
2	5	no	5.00	1	7.54	.025
	5	yes	6.40			
3	6	no	5.16	1	.19	.671
	5	yes	5.60			
4	5	no	6.20	1	9.00	.024
	3	yes	7.00			
5	5	no	5.20	1	1.60	.253
	3	yes	7.20			
9	4	no	5.25	1	1.06	.350
	3	yes	7.00			

Although no hypotheses were formulated regarding the effect of feedback on the Average Hope group's confidence measures, a one-way ANOVA was conducted to investigate that relationship. Table 7 summarizes the results of that analysis.

Table 7

One-way ANOVA Results for Confidence Measures in the Average Hope Group.

Day	N	Feedback	Conf	DF	F ratio	p<
1	7	no	5.71	1	.04	.850
	7	yes	5.57			
2	8	no	5.25	1	7.61	.015
	8	yes	6.50			
3	8	no	5.50	1	9.33	.009
	8	yes	6.50			
4	7	no	6.00	1	.02	.885
	8	yes	6.12			
5	7	no	6.00	1	1.35	.267
	7	yes	6.42			
9	7	no	6.57	1	.03	.855
	6	yes	6.50			

9. Hypothesis 9 was confirmed. Spiritual Well-being as measured by the SWB was significantly related to HIS scores ($r(42) = .38$, $p<.01$, one-tailed). The EWB subscale of the SWB also had a significant relation to HIS scores ($r(42) = .40$, $p<.01$, one-tailed). The RWB manifested a more modest correlation with HIS scores ($r(42) = .27$. $p<.05$, one-tailed).

10. Hypothesis 10 was confirmed. Internal locus of control as measured by Rotter's I-E scale was significantly related to HIS scores ($r = .49$, $p<.01$, one-tailed).

Other Main Effects

There was a significant negative relation between HIS scores and the number of cigarettes the subjects were smoking at the time of the 8-month followup ($r(41) = -.41$, $p<.01$, one-tailed). HIS scores were positively related to the amount of time since subjects' most recent cigarette ($r = .27$, $p<.05$, one-tailed) and to the confidence subjects expressed toward becoming (or remaining) a nonsmoker at the time of the 8 month followup ($r(40) = .28$, $p<.05$, one-tailed). The HIS was not significantly related to the amount of time before subjects' first occasion of smoking after the Smoke Free program ended ($r = .15$). Table 8 presents the

correlations between the instruments and treatment outcomes.

The SWB, EWB and RWB were not significantly correlated with any measures of treatment outcome.

Internality on the Rotter I-E scale was significantly related to graduation from Smoke Free ($r(42) = .29$, $p<.05$. one-tailed). No other significant relations between internality and treatment outcome measures was manifest.

Table 8

Test and Outcome Correlations

		HIS	Rotter	SWB	EWB	RWB
	N	45	45	44	44	44
Grad.	44	.30*	.29*	-.01	-.09	.05
Last smoke	45	.27*	.10	-.05	-.04	-.04
1st smoke	45	.15	.13	-.11	-.14	-.06
Nonsmk 8 m	45	.43**	-.18	.13	.09	.12
Cigs. 8 m	43	-.41**	.24	-.11	-.05	-.15
Conf. now	42	.28*	-.11	-.02	-.02	-.01

*=p<.05; **=p<.01 (all one-tailed tests)

During Treatment Measures

Daily measures of "degree of confidence toward becoming a nonsmoker by the end of Smoke Free" were increasingly related to graduation from Smoke Free. Following are the correlations between self-reports of confidence and graduation: Treatment Day 1, $r(39) = -.18$; Day 2, $r(40) = .11$; Day 3, $r(40) = .23$; Day 4, $r(36) = .33$, $p<.05$; Day 5, $r(36) = .33$, $p<.05$; Day 9, $r(32) = .46$, $p<.01$.

A multiple regression analysis was conducted in which each of the six "during treatment" measures of confidence were entered into the regression model one at a time beginning with confidence measured on day 9, then day 5, etc. The analysis revealed that measures from Days 5 and 9 had a multiple correlation coefficient of $r = .46$, $F(2, 34) = 3.48$ $p<.045$. Thus 21% of the variance in graduation is explained by measures from these two days. The multiple correlation of Day 9's confidence measure alone was $r = .45$, $F(1, 34) = 6.79$, $p<.014$. Therefore, confidence on day 9 of treatment accounted for 20% of the variance of graduation. No other variables in this sequential multiple regression procedure accounted for additional

variance at the .05 level. For a complete presentation of all multiple regression analyses see Appendix O.

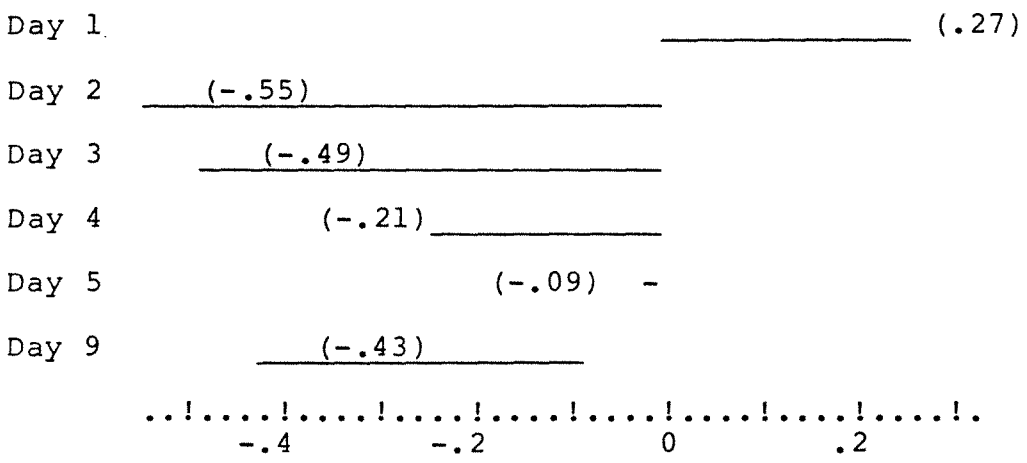
Another multiple regression analysis was constructed in which HIS scores and confidence measures from day 9 were entered simultaneously. A multiple correlation of $r = .48$, $F(2, 34) = 4.44$, $p<.020$ was obtained. These two factors accounted for 22.84% of the variance in graduation. Combining HIS scores with the confidence measures from day 9 only explained 2.84% more variance than was explained by confidence from day 9 alone.

The numbers of cigarettes smoked on a particular day during treatment were also consistently related to graduation from Smoke Free. Following are the Pearson correlations: Day 1, $r(39)=.27$, Day 2, $r(40)=-.55$; Day 3, $r(40)= -.49$; Day 4, $r(36)= -.21$; Day 5, $r(37)= .09$; Day 9 $r(33)= -.43$. Figure 2 provides a bar graph illustration of the correlations between daily cigarette consumption and graduation. The pattern is clearly more irregular than that of the relation between daily confidence measures of becoming a nonsmoker and graduation from Smoke Free. It is important to remember that subjects were not instructed to stop smoking until the evening of the first day.

Thus this measure on day 1 had a significantly different context from that of the subsequent treatment days.

Figure 2

Correlations between daily cigarette consumption and graduation.



A stepwise model was used to analyze the relation between number of cigarettes smoked per day during treatment and graduation. A multiple correlation coefficient of $r = .55$, $F(2, 40) = 6.23$, $p < .0058$ was found when Days 1 and 3 were considered. Thus 30.79% of the variance was accounted for by measures from these two days. Considered alone, the number of cigarettes

consumed on day 3 accounted for 18.72% of the variance (r= .43, $F(1,40)$= 6.68, p<.0150).

Post Treatment Expectancy Effects

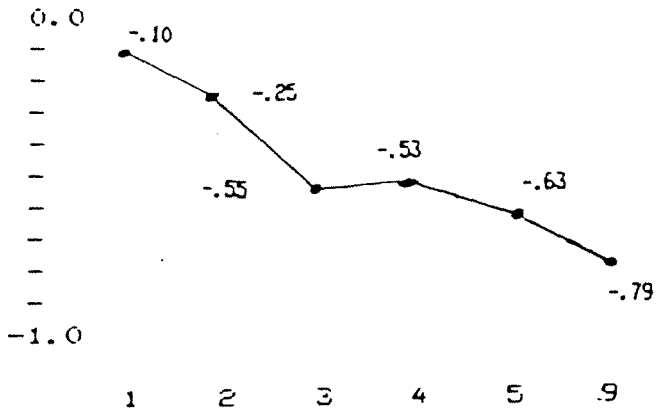
At the time of the 8-month followup, those subjects who graduated from Smoke Free manifested significantly higher confidence toward "remaining (or becoming) a nonsmoker" than subjects who did not graduate. Means for graduates versus non-graduates were 5.97 and 3.85, respectively. The oneway ANOVA was $F(1, 42) = 14.57$, p<.0005. (See Appendix P.)

Subjects who were nonsmokers at the time of the 8-month followup likewise manifested a significantly higher mean "confidence of remaining (or becoming) a nonsmoker" than those who were currently smoking. The mean confidence measures for nonsmokers versus smokers were 6.82 and 4.28, respectively. The oneway ANOVA obtained was $F(1, 42) = 30.62$, p<.0000.

Interrelations of During Treatment Measures

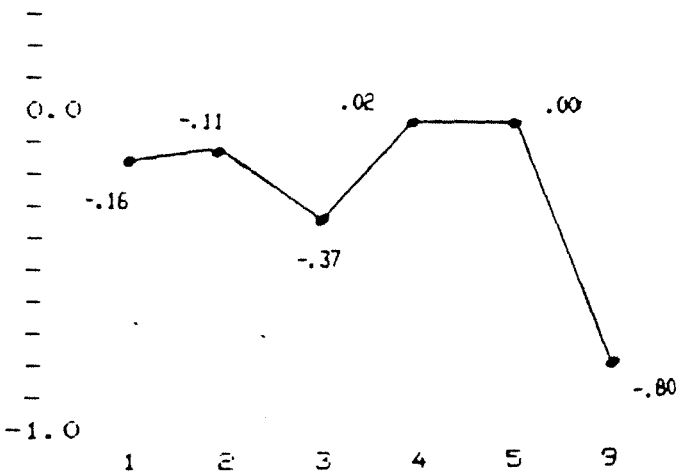
The three figures that follow provide a graphic illustration of the intercorrelations between the three "during treatment" variables.

Figure 3



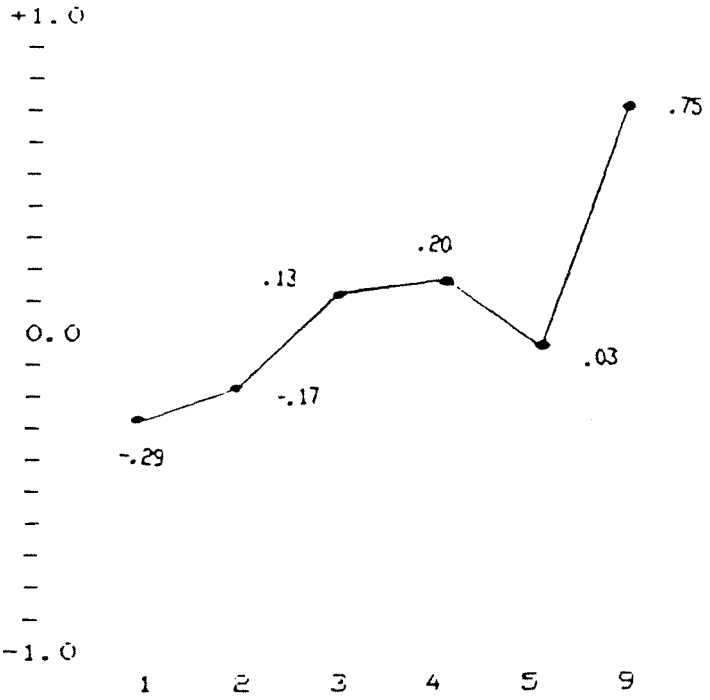
Correlations between daily measures of confidence and difficulty

Figure 4



Correlations between daily measures of confidence and cigarettes

Figure 5



Correlations between daily measures of difficulty and cigarettes

Previous Smoking Behavior & Outcome

Using the correlation method (see Appendix M) and the Chi square method (see Table 9 below) none of the pretreatment smoking measures (ie. length of time smoking, number of quitting attempts, length of abstinence) were significantly related to graduation from Smoke Free or to nonsmoking at the 8-month followup. However, it is possible that significant correlations might have been found if subjects' data

had not been gathered with the method employed in questions 1 and 2 on the Smoking History Questionnaire (see Appendix Q). The use of unequal ranges for each response may have limited the precision of the statistical analyses employed.

Table 9

Relationships between Previous Smoking Behavior and Outcome

	With Graduation
Length of time smoking	χ^2 (5, N = 44) = 6.03, p<.303.
# quitting attempts	χ^2 (7, N = 44) = 10.02, p<.186.
Longest abstinence	r = -.29

	With Non-smoking at 8 Months
Length of time smoking	χ^2 (5, N = 45) = 5.07, p<.406.
# quitting attempts	χ^2 (7, N =45) = 7.95, p<.336.
Longest abstinence	r = -.09

Demographics and Outcome

Among the demographic factors, only marital status yielded a significant relationship with graduation and/or nonsmoking at the time of the 8-month followup. Figure 6 presents a frequency barchart of graduation

among the various marital statuses. The Chi square was $\chi^2_{(4,N=44)} = 13.95$, $p<.0075$. Clearly the married subjects were more likely to graduate. Twenty two out of 25 married people graduated. That represents an 88% success rate for this group. In contrast only 4 of 11 (36%) divorced subjects graduated. Among never-married individuals, 4 of 6 (67%) graduated.

Figure 6

Frequency of Graduation by Marital Status

never married	GGGG (4)
	NN (2)
married	GGGGGGGGGGGGGGGGGGGGGG (22)
	NNN (3)
divorced	GGGG (4)
	NNNNNNN (7)
widowed	(0)
	N (1)
living as	(0)
married	N (1)

G = graduation from Smoke Free

N = did not graduate from Smoke Free

The relation of marital status to nonsmoking at the 8-month followup was also significant. $\chi^2(4, N=45) = 11.13$, $p<.025$. Figure 7 presents frequencies for marital status and nonsmoking at the 8-month followup.

Figure 7

Frequency of Nonsmoking at 8 Months by Marital Status

never married	SSS	(3)
	NNN	(3)
married	SSSSSSSSSSS	(12)
	NNNNNNNNNNNNN	(14)
divorced	SSSSSSSSSS	(11)
		(0)
widowed	S	(1)
		(0)
living as married	S	(1)
		(0)

N= not smoking at the time of the 8 month followup

S= smoker at time of the 8 month followup

No other significant relations were found between demographic factors and measures of outcome. Table 10 presents a summary of the findings between demographic factors and outcome measures. Appendix R contains the complete statistical analyses for these questions.

Table 10

Demographics and Outcome

	Test	N	Statistic	Signif	DF
Income - Grad.	χ^2	44	2.72	.843	6
Income - Nonsmk	χ^2	45	9.08	.169	6
Mar Stat - Grad	χ^2	44	13.95	.008	4
Mar Stat - Nonsmk	χ^2	45	11.13	.025	4
Sex - Grad	χ^2	44	.59	.443	1
Sex - Nonsmk	χ^2	45	2.50	.113	1
Educ - Grad	Pearson r	44	.19	>.05	42
Educ - Nonsmk	Pearson r	45	-.03	>.05	43

Relations between Instruments

As noted earlier, both the SWB and internality on the Rotter I-E scale were positively correlated with HIS scores. In addition, the SWB and internality on the Rotter were significantly related to each other ($r(42) = .46$, $p < .005$). The EWB subscale had a correlation of

($r(42) = .48$, $p<.01$) with internality on Rotter's I-E scale. The correlation between internality on the Rotter I-E scale and the RWB was $r(42) = .33$, $p<.05$.

Demographics' Relations with Instruments

Of all the demographic factors only one yielded a significant relation with one of the instruments used in this study. Income and HIS scores had a correlation of $r(43) = .38$, $p<.01$. Appendix M presents the correlations that could be computed between linear demographic data and the instruments. Appendix S presents the findings for nonparametric demographic data in relation to the three instruments.

The complete raw data matrix can be found in Appendix T.

CHAPTER IV

DISCUSSION

In this chapter the interpretations and implications of the study are presented. First, the relationship between hope and behavior change is discussed in regard to the following specific areas; generalized hope, specific hope, effects of pretest feedback upon expectancies, distortion of expectancies, and the relationship between goal achievement and subsequent expectancies. Then the findings about locus of control, spiritual wellbeing, demographics and outcome, and demographics and the Hope Index Scale are discussed. A brief summary of the method and significance of this effort to integrate psychology and theology is presented. Potential directions for future research on hope are also outlined. This chapter concludes with a brief summary of the major findings and implications of this study.

Hope and Behavior Change

The underlying hypothesis of this study has been that hope is an important factor for successful

behavior change. The results of this experiment suggest that hope is associated with desirable behavior changes. Both generalized and specific measures of hope were positively related with successful outcomes. The generalized measure of hope was also significantly related to maintenance of the desired change eight months after the completion of treatment.

Generalized Hope. The generalized hope measure (ie. the HIS) pertains to 5 basic areas that Obayuwana and Carter (1982) claim are common to all people to some degree or other. These include: ego strength, religion, family support, economic assets, and education. As hypothesized, higher scores on this broad measure were associated with successful treatment of unwanted cigarette smoking ($r(42)=.30$, $p<.05$).

Although the correlation between generalized hope and outcome was modest, it was significant. This suggests that some of the characteristics tapped by the HIS are the same characteristics necessary for behavior change. One of those characteristics may pertain to motivational levels. In Proposition I Stotland (1969) noted that one's perceived probability of attaining a goal (ie. one's hope) has a direct bearing on one's motivation level in relation to that specific goal.

If motivation levels for specific goals are related to specific hopes, then it follows that a generalized level of motivation would be a concomitant of a generalized state of hope. Accepting that premise, we assume that subjects with relatively higher HIS scores also had relatively higher levels of motivation. The positive correlation between HIS scores and quitting smoking was expected because the broad foundation of a generalized hope contributed to a higher level of motivation for pursuing goals. Stotland's 1st and 7th propositions predict an increased probability that appropriate schemas would be invoked and remain invoked for a longer period because of higher motivational levels.

The fact that this measure of generalized hope was related to successful outcomes is consistent with the work of Obayuwana (1980); Achterberg, Simonton and Simonton (1976), and with Frank's (1968) contention that hope is an essential for therapy in general.

Specific Measures of Hope. In keeping with Perotti and Hopewell's (1976) research, subjects' expectations were measured throughout the treatment process. When analyzed, the Daily measures of confidence from the first 3 days of treatment were not significantly

related to outcome. However, confidence measures from days 4, 5, and 9 were significantly related to graduation. These results are consistent with the literature on expectancy and outcome (Perotti & Hopewell, 1976; and Wilkins, 1973). Early self-reports of expectancy about outcome typically are not good predictors of outcome. However, as treatment progressed, self-reports of outcome expectancies were increasingly consistent with actual treatment outcomes.

The increasing correlational relationship that was manifested between confidence and outcome suggests that actual experience with the target behavior is a potent influence upon expectancies about efficacious pursuit of behavioral goals. If we equate the "self-report of confidence" in this study with the concept of "expectancy of self-efficacy", we have additional support for Rosenthal and Bandura's (1978) conclusion that mastery experiences build expectations of self-efficacy.

It appears that subjects' expectations were affected by their experience with attempting to quit smoking. Presumably, those who perceived that they were mastering the ability to stop smoking during treatment, began to report more confidence that they would be

nonsmokers at the time the treatment phase was completed. Conversely, those who perceived that they were not mastering the skill of stopping smoking during treatment, began to report relatively less confidence of becoming nonsmokers by the end of treatment.

The statistical analysis used to test the relationship between "during treatment confidence" and graduation was not adequate to determine whether there was an increase in confidence for those who graduated or if there was a decrease in confidence for those who did not graduate or if both groups experienced significant changes. Such an analysis remains for other studies to answer.

The results of this study may add to the explanatory precision of the expectancy research literature. The "during treatment" measures prescribed by Perotti and Hopewell (1976) can be explained as measurements of changes in expectancies of self-efficacy. Such changes are precisely what Rosenthal and Bandura (1978) predicted would occur when an individual attempts to master a target behavior. Rosenthal and Bandura might reason that the progressively higher correlations between outcome expectancies and actual outcome did not occur merely because subjects had <u>time</u>

to evaluate their prospects of success. Rather, subjects also had experience with the target behavior. This experience gave subjects an opportunity to evaluate their ability to master the behavior. In addition, the experience was an opportunity to practice and improve the skills involved in the target behavior.

Effects of Feedback on Confidence Measures

The effects of feedback regarding HIS scores were surprising to the investigator. While no significant differences were found in the high hope group between feedback and no-feedback conditions, there was a significant paradoxical effect among the low hope group subjects. Those who were told on day 1 that they were in the low hope group manifested significantly higher confidence measures on days 2 and 4 than those in the low hope group who did not receive feedback. It is possible that such information (presumably unpleasant information) served to activate defenses to counter their apparent hope deficit.

In the average hope group, subjects who received feedback regarding their HIS scores on day 1 also manifested higher confidence scores on days 2 and 3 than those in the average hope group who did not receive feedback. Perhaps low and average hope subjects

who received feedback perceived that their prospects for success might be greater than their HIS group placement might indicate. Alternatively, these subjects may have perceived that there was room for improvement in the area of hope as compared to at least part of the class. They may have tried to use daily reports of confidence as a forum for expressing and building an increased expectancy of success. In other words, these subjects may have attempted to manipulate their hope (ie. expectancy) perceptions. In essence, such a response would be an attempt to change an effect without addressing the cause of the effect. Such changes in perception without actual expectancy building experiences that are effectually related to the target behavior (eg. mastery experiences with the target behavior) are not likely to result in enduring effects.

It should be remembered that the method of giving feedback in this study was relatively discrete. It came in the form of a slip of paper in a sealed envelope. Since subjects were also receiving many other forms of input and encouragement on a daily basis from those who were teaching the class it is possible that the

feedback of HIS scores was not communicated in the most potent fashion possible.

Distortion of Expectations for Desired Goals

In chapter one, mention was made of the possibility that individuals may tend to distort their expectations when it comes to a desired event. The pattern of correlations between confidence measures and actual outcome sheds some light on this issue (see figure 1). It appears that expectations correspond more with actual outcome realities as the opportunity for testing that correspondence nears. In this study, the reality factors were: 1) the approaching, predetermined, date on which treatment would conclude; 2) the experience they had had in trying to master the task of quitting smoking. Thus, the probability of distorting expectancies was reduced significantly by the 9th day of treatment because subjects knew that they must have the task of "not smoking" mastered from that time forward if they were to meet the requirements for graduation.

These findings may have some relevance to the problem of procrastination and other avoidance behaviors. It appears that when real contraints are placed upon an individuals performance of a task (eg. a

deadline) there is far less room for distortion of expectancies (even self-deception) about successful outcome.

Goal Achievement & Post-Treatment Expectancies

Up to this point the focus has been on the relation between expectancies and subsequent behavioral outcomes. Now let us consider the effect of achieved goals upon subsequent expectations. The post-treatment measures of subjects' confidence of remaining (or becoming) a nonsmoker was significantly greater among graduates from Smoke Free than nongraduates. In fact, the difference was significant at the .0005 level. This same measure of confidence differed even more when nonsmokers were compared to smokers at the time of the 8-month followup. This time the significance level was beyond the fourth decimal place! From these results we can argue that attainment of, and maintenance of, target behavior goals are potent influences upon subsequent expectancies regarding the target behavior. In fact, there appears to be a spiraling interaction in which expectancies influence behaviors which affect subsequent expectancies about behaviors.

The interactive relationship between expectancies of outcome suggested in this study is consistent with

Stotland's (1969) theory of hope. An underlying principle of his theory is that cognitive schemas are the organizing structures of the behavioral repitoires which are invoked when an organism pursues a goal. In Propostion 7 he stated that the number of times a schema (ie. a cognition) is invoked and the number of times that events (ie. interactions with reality, including behaviors) are consistent with the schema the more likely the schema will be invoked and remain invoked in the future. In other words, the more that a schema (including the expectation of attainment) and behaviors are consistent, the more likely that the schema (including the expectation of attainment) will occur when that goal is encountered in the future.

This interactive or spiraling relationship between expectancies and behavior also provides support to the notion that hope is dynamic rather than static.

Locus of Control Findings

The significant positive relationship that internality on Rotter's I-E scale manifested with graduation from Smoke Free (r = .29, p<.05) was as hypothesized. This suggests that internal locus of control is a relevant factor for behavior change. This relationship was expected in light of Schachter and

Gross' (1968) research on obese people. It is also consistent with the popular attribution of self-control to those who quit an unwanted habit such as smoking.

The significant relationship between internality and HIS scores (r = .46, p<.01) was also hypothesized. In chapter I, when addressing the topic of "Building Hope", it was mentioned that the 5 component parts of the HIS could be described as collections of success experiences. Attainment of a goal is known to build expectations (hope) of self-efficacy. Therefore, the association between internality and HIS scores is expected because the individual perceives that the successes they have experienced in the past are the result of their own doing.

Internality also yielded a significant positive relationship with Spiritual Wellbeing (r = .46, p<.01). The correlation with existential wellbeing was (r = .48, p<.01) while the correlation with religious wellbeing was (r = .33, p<.01). This suggests that an inner sense of control is commonly experienced among those who have spiritual wellbeing. Perceptions of oneself as an active agent rather than an externally controlled responder appear to be concomitants of

religious and existential wellbeing. The existentialist tenet that man can be free, appears to be supported by these findings in that those who had a sense of self-determination (ie. internality) also manifested higher measures of existential wellbeing.

Spiritual Wellbeing Findings

As Obayuwana and Carter (1982) might have predicted, HIS scores were correlated with measures of spirituality (HIS-SWB r = .38, p<.01; HIS-EWB r = .40, p<.01; HIS-RWB r = .27, p<.05) The results in this study were interesting in that the SWB manifested significant correlations with hope and internality but not with graduation from Smoke Free. That suggests that SWB and HIS scores are independent measures. That is to say, some factors in the HIS which relate to spiritual wellbeing are not the same factors that explain the variance of graduation from Smoke Free. This may be an indication of the paradoxical qualities of hope that Fromm (1968) was alluding to when he said that hope "is neither passive waiting nor is it unrealistic forcing of circumstances that cannot occur." Perhaps the "not forcing of circumstances" is an aspect of hope that is also common to spiritual wellbeing (especially existential wellbeing), whereas the aspect of hope that

pertains to behavior change (ie. not being passive) is not common to measures of spiritual wellbeing.

Outcome and Demographics

Married individuals were over represented among graduates as well as among nonsmokers at the 8-month followup. Conversely, the divorced subjects were under represented on these two measures. It appears that certain aspects of married life were conducive to quitting. Perhaps having regular and extended contact with another (presumably concerned) person was a factor contributing to the success of married subjects. Alternatively, it is possible that pressure and complaints from a nonsmoking spouse added additional motivation for some married participants. Subsequent studies may shed light on the influence that spouses have on people who are attempting to quit smoking.

HIS and Demographics

Among the demographic factors only income manifested a significant relationship with HIS scores r (43) = .38, $p<.01$. This positive relationship is to be expected because Obayuwana and Carter (1982) have identified economic assets as one of the five component parts of the HIS. The failure of education to manifest a significant correlation with the HIS, r (42)

=.11, may be due to the relatively narrow range of years of education in this sample. The mean years was 13.25 with standard deviation of only 1.75.

Summary of this Integrative Effort

Two basic methods were employed for the task of integration in this study. First, parallels between psychological research and biblical theology were identified. These include the following principles: 1) that hope results from a process of actual experiences with the target goal; 2) that a valid basis is required for a hope that is sound; 3) that hope can impact cognitions, behaviors, and emotions. This process of drawing parallels between phenomena from the domains of psychology and theology and then relabeling the phenomena using common descriptors is one of the primary techniques Larzelere (1980) recommended for integration at the linkage level.

The second method employed was an empirical investigation of the relations between a measure of spirituality (ie. SWB) and measures of a more conventional psychological nature (ie. HIS and Rotter's locus of control scale). Here, integration was being done at the hypothesis and specific proposition levels. First, hypotheses between psychological and theological

phenomena were formulated and then tested. Then, after the findings were interpreted, relationships between a theological concept and several psychological concepts were posited.

Future Directions for Research on Hope

This present study addressed a number of important issues regarding hope. However there is need for further broadening of population samples under various conditions. Certainly Obayuwana et al. (1982) have laid the foundation for such work. The use of the HIS prior to a variety of psychological, behavioral, medical, and social experiences could help accomplish that goal.

Extended longitudinal studies with periodic retaking of the HIS (eg. annually) may offer some valuable information about the nature of a generalized state of hope. Earlier mention was made of Erickson's contention that hope is the product of the first psychosocial stage. At the other end of his model Erickson (1968) describes the final stage as Integrity versus Despair. The quality of despair is frequently equated with the absence of hope. It would be interesting to follow the Hope Indices of a person along with a brief history-taking to try to identify

the events and circumstances that are associated with changes of this index.

Since the HIS is a relatively new scale there is still room for analysis of the instrument itself. Factor analysis of HIS items to find which ones contribute to the correlations with the EWB and internality on Rotter's I-E scale would be most informative.

The paradoxical influence that feedback regarding HIS scores had among those in the low and average hope groups also merits investigation. A complete evaluation of this effect might be carried out by giving falsified HIS feedback to some subjects in each of three levels of hope while giving true feedback to others in each of the groups. A control group of "no feedback" within each of three hope levels would also be appropriate. Alternatively, investigators might give HIS feedback expressed in terms of the subject's percentile rank in the whole sample. Once again, some subjects should be informed while others are kept uninformed.

Finally, there is need for a more thorough theoretical/theological study of hope with special attention being given to the emotional and behavioral determinants and consequences of this human experience

as dealt with in the Bible. Such an effort could include a discussion of "levels of adversity" from a theological perspective. Such a discussion would have great heuristic value for integrative studies of suffering trials and having hope during difficult times.

Summary and Conclusions

The findings of this study indicate that a significant relationship exists between hope and behavior change. The relationship is more complex than might first be expected. In part, this is because hope is a complex human phenomenon. Hope must be understood as having both generalized and specific manifestations. That is, hope can focus on one particular event, a series of events, or on the aggregate of a person's life events. This aggregate of hope, which may result from the sum of past experiences in which one's expectations were or were not met, can be seen as a "generalized hope" or "hope gestalt."

Generalized hope and specific hope measures both have utility for designing behavioral interventions. Generalized hope appears to be a useful pretreatment predictor of treatment outcome while specific measures of "expectancy of successful outcome" taken during

treatment are good predictors of outcome after the individual has been in treatment for a period of time.

The implications of these findings are significant for a variety of therapeutic approaches. Knowledge of a person's generalized and specific hope levels could give therapists some indication of the prospects of outcome, as well as an indication of the person's most immediate need. For example, a therapist might choose to recapitulate the current phase of treatment rather than initiate a next phase if the client harbors low hopes of success that arose during the current phase of treatment.

In this study two methods of integrating psychology and theology were employed; 1) paralleling psychological and theological constructs, and 2) empirically investigating instruments which were designed to measure such constructs. The positive relationships that were manifested between the three instruments used in this study indicate that internal locus of control, spiritual wellbeing, and generalized hope occur together.

Finally, the useful information gained from this study was obtained because two disciplines, psychology and biblical theology, were drawn into a single arena

in order to investigate a phenomenon in which both disciplines have an interest. Future efforts to gain a wholistic view of man and his adjustment will most certainly be more fruitful when the perspectives of these two solid disciplines are taken into account.

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Appendix A

SMOKE - FREE

Portland Adventist Medical Center's stop smoking program can help you to be free again. Free from dependence on tobacco in any form. Free for the rest of your life! Call today and reserve your place in the next program.

CONTENT

Eight 2-hour sessions over a three-week period offer you information, motivation and interaction with others who are going through the very same experience. Films, lung function tests, computerized health appraisals, lectures and small group discussions will make it easy for you to stop smoking now and enhance the possibility of your long-term success. SMOKE-FREE emphasizes personal worth, responsibility and the learning of non-smoking skills. There is no electric shock or hypnosis in the program.

SCHEDULE - 1983

	June 7:00 pm	August 10:00 am	September 7:00 pm	November 7:00 pm
1. Getting Ready to Quit	16 (Thu)	12 (Fri)	8 (Thu)	10 (Thu)
2. Quitting--Cold Turkey!	19 (Sun)	15 (Mon)	11 (Sun)	13 (Sun)
3. Mind Over Matter	20 (Mon)	16 (Tue)	12 (Mon)	14 (Mon)
4. Managing Urges	21 (Tue)	17 (Wed)	13 (Tue)	15 (Tue)
5. Lifestyle and Quitting	22 (Wed)	18 (Thu)	14 (Wed)	16 (Wed)
6. Weight Management	23 (Thu)	19 (Fri)	15 (Thu)	17 (Thu)
7. Relapse Prevention	27 (Mon)	22 (Mon)	19 (Mon)	21 (Mon)
8. Graduation & Diplomas	30 (Thu)	29 (Mon)	26 (Mon)	28 (Mon)

COST

A registration fee of $40 per person ($30 for spouse) is payable at the close of the first session if you choose to continue. This fee covers all computerized appraisals, lung function testing, printed materials, a subscription to "Smoke Signals" and the privilege of repeating SMOKE-FREE at no cost for one year. A non-smoking spouse or friend may attend at no cost.

PLEASE NOTE!

You are invited to attend the first session with no obligation to continue. It is all about getting ready to quit. It is a perfect opportunity to find out if you are ready to quit and if this is the right program for you. You do not stop smoking at the first session.

Health Education
Portland Adventist Medical Center
10123 SE Market Street, Portland OR 97216

503/239-6105
503/251-6105

Appendix B

Investigator's Initial Address To The Smoke-Free Class

Good evening. My name is Wayne Palmer and I am currently doing research on some of the factors that may be involved in quitting smoking. I have come to ask for your help in my study.

I am seeking to discover if certain attitudes or beliefs or feelings can help predict success in quitting smoking. At this point it would be detrimental to the study to explain the specific things I hope to measure.

Your part in the study will be to complete several questionaires tonight before you leave and then to report on how you are feeling about becoming a non-smoker on each evening that we meet. The questionaires tonight will take aproximately 20 minutes to complete. At the other meetings you will simply answer three questions about becoming a non-smoker.

Your participation is purely optional but it is greatly desired! You see, the value of this study will largely depend upon the degree of cooperation I have from you. My hope is that each of you will take the time to participate.

At the end of the program, if you wish, you will each receive a summary of my findings and an indication of your individual results. All of the data will be kept confidential, and only I will have access to your specific data. Not even Harold[1] will know what your individual results will be. All of the questionaires are coded so as to keep your responses confidential.

My assistants and I will begin passing out the questionaires now. Please be sure to put your phone number or numbers on the first page of your questionaires. If you have any questions please feel free to ask. If you do not wish to participate you are free to leave now.

Once again thank you very much for your help.

1. Harold Burden was the instructor of the Smoke-Free Program.

Appendix C

PARTICIPATION AGREEMENT I.D.#___

I, _____, agree to participate in this
(print name)
study on quitting smoking as described by Mr.Wayne Palmer on this day,9/8/1983.

I understand that my paticipation will involve the following:

1. Completing the questionaire packet tonight.
2. Reporting (on a form to be provided me) how I am feeling about becoming a non-smoker at each Smoke - Free meeting that I attend.
3. Being contacted by telephone six months after Smoke - Free to report my smoking behavior.
4. Possibly being contacted by telephone within the next two days to receive some of my initial results from the questionaires.

I also understand that I can receive, in writing, the results and conclusions of this study when it is completed. I can also receive my personal questionaire results if I so desire. Finally, I understand that all data will be coded in order to maintain confidentiality. Only Mr.Palmer will have access to the code key. The connection between my identity and my data will be destroyed upon completion of this study.

X _____ Date:

Appendix D

Smoking History

I.D.#___

1 How long have you been a smoker? (circle one)

1. Less than six months
2. 6 months - one year
3. One - two years
4. Two - five years
5. Five - ten years
6. Ten - fifteen years
7. Fifteen - twenty years
8. Twenty - thirty years
9. More than thirty years

2 What is the number of times that you have <u>seriously</u> attempted to quit smoking? (circle one)

0	5 - 7
1	8 - 10
2	11 - 14
3	15 - 20
4	More than 20

3 Since you first became a smoker, what is the longest period you have gone without smoking? _____

4 Please indicate the degree of confidence you feel in regard to becoming a non-smoker by the end of the Smoke-Free Program.

(circle one)

1. Extremely doubtful
2. Moderately doubtful
3. Slightly doubtful
4. 50 - 50 chance
5. Slightly confident
6. Moderately confident
7. Extremely confident

Appendix E

ID #___

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree
MA = Moderately Agree
A = Agree
D = Disagree
MD = Moderately Disagree
SD = Strongly Disagree

1 I don't find much satisfaction in private prayer with God. SA MA A D MD SD

2 I don't know who I am, where I came from, or where I'm going. SA MA A D MD SD

3 I believe that God loves me and cares about me. SA MA A D MD SD

4 I feel that life is a positive experience. SA MA A D MD SD

5 I believe that God is impersonal and not interested in my daily situation. SA MA A D MD SD

6 I feel unsettled about my future. SA MA A D MD SD

7 I have a personally meaningful relationship with God. SA MA A D MD SD

8 I feel very fulfilled and satisfied with life. SA MA A D MD SD

9 I don't get much personal strength and support from my God. SA MA A D MD SD

10 I feel a sense of well-being about the direction my life is headed in. SA MA A D MD SD

11 I believe that God is concerned about my problems. SA MA A D MD SD

12 I don't enjoy much about life. SA MA A D MD SD

13 I don't have a personally satisfying relationship with God. SA MA A D MD SD

14 I feel good about my future. SA MA A D MD SD

15 My relationship with God helps me not to feel lonely. SA MA A D MD SD

16 I feel that life is full of conflict and unhappiness. SA MA A D MD SD

17 I feel most fulfilled when I am in close communion with God. SA MA A D MD SD

18 Life doesn't have much meaning. SA MA A D MD SD

19 My relation with God contributes to my sense of well-being. SA MA A D MD SD

20 I believe there is some real purpose for my life. SA MA A D MD SD

Appendix F

ID #___

This is a questionaire to find out the way in which certain important events in society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select one statement of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. Be sure to select the one that you actually believe to be more true rather than the one you think you should choose or the one you would like to be true.

(Circle a or b)

1 a. Children get into trouble because their parents punish them too much.

b. The trouble with most children nowadays is that their parents are too easy on them.

2 a. Many of the unhappy things in life are partly due to bad luck.

b. People's misfortunes result from the mistakes they make.

3. a. One of the main reasons we have wars is because people don't take enough interest in politics.

b. There will always be wars,no matter how hard people try to prevent them.

4 a. In the long run people get the respect they deserve in this world.

b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5 a. The idea that teachers are unfair to students is nonsense.

b. Most students do not realize the extent to which their grades are influenced by accidential happenings.

6 a. Without the right breaks one can not be an effective leader.

b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7 a. No matter how hard you try some people just don't like you.

b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determing one's personality.

b. It is one's experiences in life that determine what they're like.

9. a. I have often found that what is going to happen will ahppen.

b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10 a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

b. Many times exam questions tend to be so unrelated to the course work that studying is really useless.

11 a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

b. Getting a good job depends mainly on being in the right place at the right time.

12 a. The average citizen can have an influence in government decisions.

b. This world is run by the few people in power, and there is not much the little guy can do about it.

13 a. When I make plans I am almost certain I can make them work.

b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14 a. There are certain people who are just no good.

b. There is some good in everybody.

15 a. In my case getting what I want has little or nothing to do with luck.

b. Many times we might just as well decide what to do by flipping a coin.

16 a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17 a. As far as world affairs are concerned, most of us are the victims or forces we can neither understand or control.

b. By taking an active part in political and social affairs the people can control world events.

18 a. Most people don't realize the extent to which their lives are controlled by accidental happenings.

b. There really is no such thing as "luck".

19 a. One should always be willing to admit mistakes.

b. It is usually best to cover up one's mistakes.

20 a. It is hard to know whether a person really likes you.

b. How many friends you have depends on how nice you are.

21 a. In the long run the bad things that happen to us are balanced by the good ones.

b. Most misfortunes are the result of a lack of ability, ignorance, laziness, or all three.

22 a. With enough effort we can wipe out political corruption.

b. It is difficult for people to have much control over the things politicians do in office.

23 a. Sometimes I can't understand how teachers arrive at the grades they give.

b. There is a direct connection between how hard I study and the grades I get.

24 a. A good leader expects people to decide for themselves what they should do.

b. A good leader makes it clear to everybody what their jobs are.

25 a. Many times I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26 a. People are lonely because they don't try to be friendly.

b. There's not much use in trying too hard to please people, if they like you they like you.

27 a. There's too much emphasis on athletics in highschool.

b. Team sports are an excellent way to build character.

28 a. What happens to me is my own doing.

b. Sometimes I don't feel I have enough control over the direction my life is taking.

29 a. Most of the time I can't understand why politicians behave the way they do.

b. In the long run the people are responsible for bad government on a national as well as on a local level.

Appendix G

I.D. # ___

There are sixty (60) 'Yes' or 'No' questions in this section, and you are requested to answer all as honestly as possible.

You will find two boxes beside each question. After reading a question, put an 'X' in the first box if your answer to the question is 'Yes' or put an 'X' in the second box if your answer is 'No'.

There are no right or wrong answers to any of the questions, and it is important that you be sincere in your responses.

		YES	NO
1	If you suddenly decide to travel today, is there someone that will need you or miss you very much?	☐	☐
2	Do you often wish you were someone else?	☐	☐
3	Would you first greet the neighbor who never speaks to you?	☐	☐
4	Financially speaking; do you consider yourself more fortunate than many others?	☐	☐
5.	Do you think there is so much that you do not know?	☐	☐
6	Do you tell the truth at all times?	☐	☐
7.	Do you often wish you have more control over your own life than you do at present?	☐	☐
8.	Does it usually take you a long time to get used to something new?	☐	☐
9	Are there circumstances under which you are likely to cheat on your spouse?	☐	☐
10.	Do you think that your present financial situation is going to get any better?	☐	☐
11.	Would you describe yourself as one who reads and writes well?	☐	☐
12.	Do you like everyone you have met in your lifetime?	☐	☐
13.	In times of trouble, do you often feel that you are all alone?	☐	☐
14	Do you think that things are "all mixed up" in your life?	☐	☐
15	Do you usually go to church on Sunday or other place of worship each week?	☐	☐
16	In case of a financial emergency, do you have any savings or other means of helping yourself?	☐	☐
17	With respect to radio and television, do you prefer sports (or comedies) to news programs?	☐	☐
18	In describing yourself, would you say that you are always a happy person?	☐	☐
19	In case of an emergency, do you have a friend you can call upon no matter how late at night?	☐	☐
20	Have you sometimes really thought that life was not worth it?	☐	☐

		YES	NO
21	Do you often consider yourself a lucky person?	☐	☐
22.	Would you say that money is your major and constant worry?	☐	☐
23	If there is no other traffic and you see no police around, are you likely to go through a red light?	☐	☐
24	Do you do the right thing in all circumstances?	☐	☐
25	Are you happy living in your present neighborhood?	☐	☐
26.	Do you often carry out whatever you decide to do?	☐	☐
27.	Are you often worried that you may not live a long life?	☐	☐
28	With respect to your present employment, do you consider yourself in a good paying job?	☐	☐
29.	Do you usually wear a seat belt when you ride in an automobile?	☐	☐
30.	In describing yourself, would you say that you never worry about anything?	☐	☐
31.	Do you feel you give to people more than you get back?	☐	☐
32.	Do you think that most people can do most things better than you?	☐	☐
33.	Do you often pray before going to bed at night?	☐	☐
34.	Do you think you can personally do something to improve your present financial condition?	☐	☐
35.	In your opinion, does success in life mean money?	☐	☐
36.	Do you always love those that hate you?	☐	☐
37	Is there someone you can always talk to when it comes to very personal matters?	☐	☐
38	Do you think it is true that everyone "out there" is basically for himself/herself?	☐	☐
39	Have you ever done anything that you feel will forever remain unforgivable?	☐	☐
40.	Do you have outstanding bills or other payments that are past due because you are unable to pay?	☐	☐
41	On the same day, would you eat a favorite meal of yours for breakfast, lunch, and dinner?	☐	☐

		YES	NO
42.	Do you always mind your own business?	☐	☐
43	Is there a date or event in the future toward which you are looking forward?	☐	☐
44.	Do you have one particular habit you would rather get rid of if only you could?	☐	☐
45	In your own experience do you think that good deeds usually have their rewards and evil their punishment?	☐	☐
46.	Is there something you have wanted very much and for so long but just could not afford financially?	☐	☐
47.	Do you think that your level of education has prevented you from getting ahead in life?	☐	☐
48.	In describing yourself, would you say that you always know what to say to people?	☐	☐
49.	Would you willingly miss your favorite T.V. show, (or hobby) to take a neighbor to the store?	☐	☐
50.	When you have something to say, do you usually say it?	☐	☐
51.	Do you think that lack of money has really prevented you from having a decent living?	☐	☐
52.	If the doctor found that you have an unusual or fatal disease, would you want to be told all about it?	☐	☐
53.	Do you always go out of your way to be nice to others?	☐	☐
54.	Do you often wish your family thought more highly of you?	☐	☐
55.	Does fear of failure often prevent you from trying many things?	☐	☐
56.	Do you think you have ever been granted an unusual favor?	☐	☐
57.	Have you ever borrowed money from the bank, credit union, or other financial agency?	☐	☐
58.	Are you often embarrassed among your friends because you know so much less than they do?	☐	☐
59.	In describing yourself, would you say that you get along very well with everybody?	☐	☐
60	Is there a date or an event in the future that you have very much been dreading for a long time?	☐	☐

Appendix H

Background Information I.D.# ___

Age: ____

Sex: Male Pemale (circle one)

Education: (number of years of formal schooling) ___

Income: (circle one)
1. less than $5,000/year
2. $5,000 to $9,999/year
3. $10,000 to $14,999/year
4. $15,000 to $19,999/year
5. $20,000 to $29,999/year
6. $30,000 to $49,999/year
7. $50,000/year or more

Current Marital Status: (circle one)
1. Never married
2. Married
3. Divorced
4. Widowed
5. Separated
6. Living as married

Appendix I

To:

This is to inform you regarding one of the questionaires that you completed on Thursday evening. Your score on the Hope Index Scale puts you in the average hope group. Now we will wait to see whether your hope score has any relation to your becoming a non-smoker. You'll be receiving more complete information from me at the conclusion of the study. In the meantime, I want to wish you success in becoming a non-smoker. Thanks again for your cooperation.

To:

This is to inform you regarding one of the questionaires that you completed on Thursday evening. Your score on the Hope Index Scale puts you in the low hope group. Now we will wait to see whether your hope score has any relation to your becoming a non-smoker. You'll be receiving more complete information from me at the conclusion of the study. In the meantime, I want to wish you success in becoming a non-smoker. Thanks again for your cooperation.

To:

This is to inform you regarding one of the questionaires that you completed on Thursday evening. Your score on the Hope Index Scale puts you in the high hope group. Now we will wait to see whether your hope score has any relation to your becoming a non-smoker. You'll be receiving more complete information from me at the conclusion of the study. In the meantime, I want to wish you success in becoming a non-smoker. Thanks again for your cooperation.

Appendix J

Day ___ I.D. # ___

What degree of confidence do you feel today toward becoming a nonsmoker by the end of the Smoke Free Program ? (circle one number)

1. Extremely Doubtful
2. Moderately Doubtful
3. Slightly Doubtful
4. 50 - 50 Chance
5. Slightly Confident
6. Moderately Confident
7. Extremely Confident

Indicate the degree of difficulty that you experienced today in your effort to become a nonsmoker. (circle one number)

1. Unbearable
2. Extremely Difficult
3. Quite Difficult
4. Moderately Difficult
5. Slightly Difficult
6. Fairly Easy
7. Very Easy

How many cigarettes did you smoke since the last meeting ?

1. None
2. 1 - 5
3. 6 - 10
4. 11 - 20
5. 21 - 30
6. 31 - 40
7. More than 40

Appendix K

8-Month Follow-up Telephone Questionaire

A. Did you graduate from the Smoke-Free Program?
   1. Yes
   2. No

B. How many cigarettes do you currently smoke per day?
   1. None
   2. 1 - 5
   3. 6 - 10
   4. 11 - 20
   5. 21 - 30
   6. 31 - 40
   7. More than 40

C. When was the last time you had a cigarette? _____

D. When was your first ciggarette after the Smoke-Free Program was completed?_____

E. (for non-smokers)What degree of confidence do you have now of remaining a non-smoker?

E. (for smokers) What degree of confidence do you have of becoming a non-smoker?

   1. Extremely Doubtful
   2. Moderately Doubtful
   3. Slightly Doubtful
   4. 50 - 50 Chance
   5. Slightly Confident
   6. Moderately Confident
   7. Extremely Confident

Appendix L

Dear participant, ID #____

Thank you for your cooperation in this study on quitting smoking. Your cooperation has been invaluable in making this research possible.

The basic purpose of this study was to examine the importance of hope in quitting smoking. That is, do more hopeful people tend to quit smoking more than less hopeful people. The results of the study indicate a small but significant positive relationship between quitting and hope. There was also a positive relation between hope and remaining a nonsmoker until the time of the 8-month followup.

Another part of this study was to determine the influence of a person's beliefs about who determines the events of their lives. There was evidence that the person who saw themself as basically determining the events of their life were more likely to graduate from Smoke Free than the person who saw others as determing the events of their life.

Questions about spiritual/religious matters were added to determine the relation between hope and spiritual wellbeing. As expected, there was a positive relation between these two factors. Of the subcategories of spiritual wellbeing (existential wellbeing and religious wellbeing) the existential scale had a stronger relationship with hope, but both subscales were significantly related.

Finally, the results indicate that a person's reports of confidence about graduating from Smoke Free were not significantly accurate predictors of graduation until the 4th day of the program. However, by the 9th day, measures of confidence were very good predictors of graduation.

On the next page, you will find a brief summary of the results from the questionaires you completed for this study.

The questionaires which you completed were designed to measure some rather broad characteristics. As you may have guessed, one of the questionaires measured your thoughts and feelings about spiritual aspects of life. Another of the questionaires attempted to measure your sense of hopefulness. The third questionaire attempted to measure your perceptions of how certain important events in society occur. Essentially, the third questionaire measured the degree to which you see events in your life being in your control.

Your scores are given below. You can see how the entire class compares on these measures. Please remember that these were measures of your personal feelings and beliefs. Your scores should not be viewed as measures of your psychological adjustment.

	Your score	Class Scores
Spiritual Wellbeing Scale*...	____	_____
Religious Wellbeing.....	____	
Existential Wellbeing.....	____	
Hope Index Scale**.....	____	_____
Locus of Control***.....	____	_____

* The higher your score the greater your sense of Spiritual Wellbeing. The maximum score is 120. The maximum score for each of the subscales is 60.

** The general population scored from ___ to ___ on the Hope Index Scale. The average score in the general population ranges from ___ to ___.

*** The lower your score the more you feel that you control or influence the events that occur in your life.

1= Extreme sense that you determine the events that occur in your life.

15= Extreme sense that the events of your life are determined by others.

Thank you again for you help in this study.

Sincerely,

Wayne Palmer

Appendix M

Variable Means, Standard Deviations, And Ranges

Correlation Matrix For All Variables

Number of Valid Observations (Listwise) = 27.00

Variable	Mean	Std Dev	Minimum	Maximum	N	Label
ID	26.40	16.13	1.00	56.00	45	
FB	.44	.50	0.0	1.00	45	
SMKHX	7.09	1.31	4.00	9.00	45	
QTHX	3.16	2.02	1.00	10.00	45	
ABSHX	7.50	18.58	0.0	108.00	45	
INITCON	5.89	1.17	2.00	7.00	45	
RWB	42.86	11.33	17.00	60.00	44	
EWB	45.66	8.04	26.00	60.00	44	
SWB	88.52	16.46	57.00	119.00	44	
RTR	7.76	4.38	0.0	17.00	45	
HIS	333.11	53.04	230.00	440.00	45	
AGE	37.09	10.26	21.00	62.00	45	
SEX	1.53	.50	1.00	2.00	45	
ED	13.25	1.75	10.00	18.00	44	
INCM	4.20	1.47	1.00	7.00	45	
MSTAT	2.24	.88	1.00	6.00	45	
DAA	5.85	1.17	2.00	7.00	41	
DAB	4.64	1.40	2.00	7.00	39	
DAC	5.27	2.01	1.00	7.00	41	
DBA	6.00	.99	4.00	7.00	42	
DBB	3.76	1.38	2.00	6.00	42	
DBC	1.43	.86	1.00	5.00	42	
DCA	5.88	1.21	2.00	7.00	42	
DCB	4.19	1.35	1.00	7.00	42	
DCC	1.17	.44	1.00	3.00	42	
DDA	6.16	1.44	1.00	7.00	38	
DDB	4.66	1.51	1.00	7.00	38	
DDC	1.11	.31	1.00	2.00	38	
DEA	6.05	1.41	1.00	7.00	38	
DEB	5.26	1.19	2.00	7.00	39	
DEC	1.03	.16	1.00	2.00	39	
DFA	6.21	1.37	1.00	7.00	34	
DFB	5.79	1.41	1.00	7.00	34	
DFC	1.46	1.17	1.00	7.00	35	
GRD	.68	.47	0.0	1.00	44	
CGNW	3.05	1.90	1.00	7.00	43	
LSTSMK	3.01	3.98	0.0	9.99	45	
FSTSMK	4.01	3.72	0.0	9.99	45	
MMCON	5.31	1.92	1.00	7.00	42	
HGRP	2.11	.80	1.00	3.00	45	
NONSMK	.38	.49	0.0	1.00	45	

Correlations:	FB	SMKMX	QTMX	ABSMX	INITCON	RWB	EWB
Feedback	1.0000	-.0268	-.1143	-.0059	.0472	.0721	.3781*
Smoke mist	.0268	1.0000	-.1596	.2188	-.1561	.1123	.2124
Quit mist	-.1143	-.1596	1.0000	.2214	.1225	-.0946	-.3852*
Abstinence	-.0059	.2188	.2214	1.0000	.1144	-.2762	.0056
Initial Conf	.0472	-.1561	.1225	.1144	1.0000	-.0786	-.0095
RWB	.0721	.1123	-.0946	-.2762	-.0786	1.0000	.4287*
EWB	.3781*	.2124	-.3852*	.0056	-.0095	.4287*	1.0000
SWB	.2342	.1810	-.2532	-.1873	-.0587	.8974**	.7833**
Rotter I-E	-.0735	-.2932	.1431	.1771	-.1650	-.3291	-.4817**
HIS	.0066	.1822	-.1847	.0385	.2799	.2717	.4039*
AGE	.1288	.8629**	-.0412	.3969*	-.0842	.1237	.2492
SEX	.3884*	-.1420	-.1723	.0300	-.2050	-.2474	.0793
Education	-.0263	.0830	-.0357	.0385	.0181	-.0796	.0922
Income	.0307	.0966	-.2170	-.0086	-.2109	.1109	.1419
Day1 Conf	.0269	-.0919	-.0287	.2009	.3586	-.2644	-.1265
Diff	-.0848	-.3009	-.0173	-.0436	.0746	-.2372	.0389
Cigs	-.0452	-.1460	.2180	.0109	.0734	.0108	.0058
Day2 Conf	.3420	-.0942	-.0133	.0041	.4112*	.0028	.1733
Diff	.0616	-.1868	.1891	-.2041	-.0506	-.0822	-.1987
Cigs	-.1444	.1918	-.2231	-.1486	-.3882*	.2643	.1619
Day3 Conf	.0946	-.2209	.0496	.1255	.2385	-.1906	.1268
Diff	.0784	-.2478	-.1472	-.0944	.2677	-.1674	-.0268
Cigs	.0736	.0277	-.2309	-.1162	-.4674**	.2157	.3155
Day4 Conf	-.0998	-.1851	-.1394	-.0305	.1489	-.0849	.0086
Diff	.0393	-.1833	-.0003	-.2270	.0637	-.0875	.0280
Cigs	-.1362	-.0201	.0680	.3682	.1783	-.2549	.0551
Day5 Conf	.0759	-.3376	.1370	.0903	.3588	-.2851	-.1223
Diff	.0606	-.3284	.1212	.1270	.0056	-.4003*	-.2264
Cigs	-.1502	.1090	-.1866	-.0660	.0042	.2415	.1571
Day9 Conf	.0842	-.2030	.2953	.1835	.1887	-.2724	-.2444
Diff	.0464	-.2868	.2869	.0357	.1280	-.2935	-.2222
Cigs	-.0156	.2333	-.2224	.0052	-.2988	.2818	.2427
Graduation	.0356	-.1953	-.0427	-.2851	.1981	.0510	-.0930
Cigs at 6m	.2002	.2955	-.0520	.1996	-.0532	-.1155	-.0548
LSTSMK	-.1360	-.2331	-.0850	-.1426	.0309	-.0407	-.0391
FSTSMK	-.0882	-.2201	-.1050	-.2072	-.0676	-.0631	-.1436
Conf now	-.2311	-.2548	-.0180	-.1941	-.0338	-.0081	-.0208
Hope group	-.0125	.2060	-.0947	.0056	.3269	.2914	.3568*
Nonsmoking	-.0512	-.1241	.0311	-.0934	.1933	.1181	.0928

Minimum pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your most recent cigarette?

FSTSMK= first cigarette after Smoke Free program was over

Correlations:	SWB	RTR	HIS	AGE	SEX	Educ	Income
Feedback	.2342	-.0735	.0066	.1288	.3884*	-.0263	.0307
Smoke Hist	.1810	-.2932	.1822	.8629**	-.1420	.0830	.0966
Quit Hist	-.2532	.1431	-.1847	-.0412	-.1723	-.0357	-.2170
Abstinence	-.1873	.1771	.0385	.3969*	.0300	.0385	-.0086
Initial Conf	-.0587	-.1650	.2799	-.0842	-.2050	.0181	-.2109
RWB	.8974**	-.3291	.2717	.1237	-.2474	-.0796	.1109
EWB	.7833**	-.4817**	.4039*	.2492	.0793	.0922	.1419
SWB	1.0000	-.4617**	.3842*	.2068	-.1315	-.0102	.1456
Rotter I-E	-.4617**	1.0000	-.4854**	-.2441	.1531	-.1334	-.1229
HIS	.3842*	-.4854**	1.0000	.2050	-.1908	.1106	.3793*
AGE	.2068	-.2441	.2050	1.0000	-.0050	.0492	.0892
SEX	-.1315	.1531	-.1908	-.0050	1.0000	-.0459	-.0857
Education	-.0102	-.1334	.1106	.0492	-.0459	1.0000	.2741
Income	.1456	-.1229	.3793*	.0892	-.0857	.2741	1.0000
Day1 Conf	-.2443	.0656	-.0974	.0117	.3045	-.1427	-.3365*
Diff	-.1435	.1839	.2440	-.2140	.2268	.2581	.0054
Cigs	.0123	-.0459	.0382	-.2136	.1254	.1530	.2125
Day2 Conf	.0870	-.1132	.3351	.0474	.0980	-.0943	.0337
Diff	-.1549	.2591	-.1638	-.1251	.1927	.0120	-.1981
Cigs	.2641	.0678	-.0504	.1955	-.1046	-.1516	.0636
Day3 Conf	-.0680	-.0394	.3019	-.0802	-.0104	.0585	.2285
Diff	-.1288	.1888	.2261	-.0854	-.0137	-.0591	.0693
Cigs	.3064	.0789	-.0721	-.0361	.1292	-.1204	.0314
Day4 Conf	-.0541	.1364	.0036	-.2488	-.1604	-.0531	-.0176
Diff	-.0462	-.0549	-.1176	-.1762	-.0644	.0087	.0009
Cigs	-.1478	.0479	-.0841	-.1187	-.0363	.1031	-.3413
Day5 Conf	-.2569	.0862	.0440	-.3627	-.1532	.0337	-.0181
Diff	-.3893*	.3353	-.2404	-.2150	.0710	.0513	.0509
Cigs	.2447	-.0418	.1280	-.0090	-.1752	-.1377	.1911
Day9 Conf	-.3081	.1337	-.0465	-.2504	-.2061	.0434	-.0342
Diff	-.3125	.0917	-.1714	-.2423	-.0974	-.0125	-.0692
Cigs	.3136	.0615	-.0691	.2636	.2142	-.0803	-.0524
Graduation	-.0097	-.2924	.2983	-.3326	-.1643	.1882	.2179
Cigs at 6m	-.1065	.2402	-.4105*	.3448	.3458	.0272	-.3712*
LSTSMK	-.0471	.1018	.2699	-.2494	-.1615	.0924	.3364
FSTSMK	-.1135	.1252	.1493	-.2750	-.0675	.0565	.3398
Conf now	-.0152	-.1056	.2762	-.3081	-.1796	.0773	.3006
Mode group	.3747*	-.4120*	.9084**	.2110	-.2615	.0584	.3651*
Nonsmoking	.1265	-.1785	.4257*	-.1560	-.2817	-.0337	.3340

Minimum pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your most recent cigarette?
FSTSMK= first cigarette after Smoke Free program was over

Correlations:	Day1 Conf	Day1 Diff	Day1 Cigs	Day2 Conf	Day2 Diff	Day2 Cigs
Feedback	.0269	-.0848	-.0452	.3420	.0618	-.1444
Smoke Hist	-.0919	-.3009	-.1460	-.0942	-.1868	.1918
Quit Hist	-.0287	-.0173	.2180	-.0139	.1891	-.2231
Abstience	.2009	-.0436	.0105	.0041	-.2041	-.1486
Initial Conf	.3588	.0746	.0734	.4112*	-.0506	-.3882*
RWB	-.2644	-.2372	.0108	.0028	-.0822	.2643
EWB	-.1265	.0389	.0098	.1733	-.1987	.1619
SWB	-.2443	-.1435	.0123	.0870	-.1549	.2641
Rotter I-E	.0656	.1839	-.0459	-.1132	.2591	.0678
HIS	-.0974	.2440	.0382	.3351	-.1636	-.0504
AGE	.0117	-.2140	-.2136	.0474	-.1251	.1959
SEX	.3045	.2286	.1254	.0980	.1927	-.1046
Education	-.1427	.2581	.1530	-.0943	.0120	-.1516
Income	-.3585*	.0054	.2125	.0337	-.1981	.0636
Day1 Conf	1.0000	.1022	-.1628	.1979	.2578	-.0370
Diff	.1022	1.0000	.2916	-.0514	.3974*	.0619
Cigs	-.1628	.2916	1.0000	-.2944	.1674	-.2951
Day2 Conf	.1979	-.0514	-.2944	1.0000	.2513	-.1149
Diff	.2578	.3974*	.1674	.2513	1.0000	.1709
Cigs	-.0370	.0619	-.2951	-.1149	.1709	1.0000
Day3 Conf	-.0689	.0657	-.2724	.7121**	.0132	-.2569
Diff	.1937	.3523	-.3327	.4582*	.3005	.0992
Cigs	-.2731	.0906	.0182	-.3396	-.0597	.5295**
Day4 Conf	-.0154	-.1404	-.2074	.4830*	.0794	-.0227
Diff	.0807	.1588	-.2571	.2743	.2540	.0287
Cigs	-.0709	.0601	.1643	-.2007	-.1183	-.0305
Day5 Conf	.1179	-.0281	-.1195	.5574**	.2311	-.1716
Diff	.0433	.1036	-.2098	.2695	.2007	-.1845
Cigs	.0235	-.1955	-.1170	-.0089	-.0803	.1556
Day9 Conf	.1888	-.1018	-.0345	.3521	.1950	-.2389
Diff	.1108	-.0333	-.0780	.4073*	.3021	-.1606
Cigs	-.2689	-.1576	.0164	-.3579	-.3791	.1645
Graduation	-.1796	.0275	.2657	.1085	-.0610	-.5463**
Cigs at Bm	.3525	-.0874	-.1191	-.1848	.0528	.2357
LSTSMK	-.1850	.2796	.0408	.1563	.1258	-.1875
FSTSMK	-.2238	.0925	-.0188	.1683	.0776	-.2839
Conf now	-.3206	.0209	.1408	.0846	-.0749	-.2160
Hope group	-.1643	.2342	.1324	.2523	-.1261	-.0207
Nonsmoking	-.2640	.0395	.0839	.3014	-.0790	-.2804

Pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your most recent cigarette?
FSTSMK= first cigarette after Smoke Free program was over

	Day3			Day4		
Correlations:	Conf	Diff	Cigs	Conf	Diff	Cigs
Feedback	.0946	.0784	.0736	-.0998	.0999	-.1362
Smoke Hist	-.2209	-.2478	.0277	-.1851	-.1833	-.0201
Quit Hist	.0496	-.1472	-.2309	-.1394	-.0003	.0680
Abstinence	.1255	-.0944	-.1162	-.0305	-.2270	.3682
Initial Conf	.2385	.2677	-.4674**	.1489	.0637	.1783
RWB	-.1906	-.1674	.2157	-.0849	-.0875	-.2549
EWB	.1268	-.0268	.3155	.0086	.0280	.0551
SWB	-.0680	-.1268	.3064	-.0541	-.0462	-.1478
Rotter I-E	-.0394	.1888	.0789	.1364	-.0549	.0479
HIS	.3019	.2261	-.0721	.0036	-.1176	-.0841
AGE	-.0802	-.0854	-.0361	-.2488	-.1762	-.1167
SEX	-.0104	-.0137	.1292	-.1604	-.0644	-.0363
Education	.0585	-.0591	-.1204	-.0531	.0087	.1031
Income	.2285	.0693	.0314	-.0176	.0009	-.3413
Day1 Conf	-.0689	.1937	-.2731	-.0154	.0807	-.0709
Diff	.0657	.3523	.0906	-.1404	.1588	.0801
Cigs	-.2724	-.3327	.0182	-.2074	-.2571	.1643
Day2 Conf	.7121**	.4582*	-.3396	.4830*	.2743	-.2007
Diff	.0132	.3005	-.0597	.0794	.2540	-.1182
Cigs	-.2569	.0992	.5296**	-.0227	.0267	-.0309
Day3 Conf	1.0000	.5509**	-.3754*	.5473**	.4074*	-.2144
Diff	.5509**	1.0000	-.1380	.3751	.5725**	-.3869*
Cigs	-.3754*	-.1380	1.0000	-.2752	-.2138	.4394*
Day4 Conf	.5473**	.3751	-.2752	1.0000	.5334**	.0222
Diff	.4074*	.5725**	-.2138	.5334**	1.0000	-.2088
Cigs	-.2144	-.3869*	.4394*	.0222	-.2088	1.0000
Day5 Conf	.6130**	.3774	-.5676**	.6280**	.4554*	.0553
Diff	.5567**	.4989**	-.3053	.3851*	.5546**	-.0689
Cigs	.1405	-.0258	-.0564	.0972	.0377	-.0564
Day9 Conf	.4727*	.2044	-.7343**	.5830**	.3123	-.1195
Diff	.6453**	.4300*	-.6690**	.7378**	.6374**	-.1719
Cigs	-.4504*	-.3504	.7909**	-.2785	-.3916	.2296
Graduation	.2341	.0019	-.4855**	.3257	.2434	-.2084
Cigs at 6m	-.4345*	-.1319	.2556	-.3114	-.2877	.2056
LSTSMK	.3846*	.3861*	-.1573	.2165	.3021	-.2711
FSTSMK	.4185*	.3005	-.2683	.2449	.2283	-.3480
Conf now	.3505	-.0180	-.1948	.1836	.1614	.0486
Hope group	.2409	.2115	-.1177	-.1004	-.1075	-.0836
Nonsmoking	.4049*	.1823	-.3027	.2507	.2935	-.2770

Minimum pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your last cigarette?
FSTSMK= first cigarette after Smoke Free was over

	Day5			Day9		
Correlations:	Conf	Diff	Cigs	Conf	Diff	Cigs
Feedback	.0799	.0608	-.1502	.0842	.0464	-.0156
Smoke Hist	-.3376	-.3284	.1090	-.2030	-.2866	.2333
Quit Hist	.1370	.1212	-.1866	.2953	.2869	-.2224
Abstinence	.0903	.1270	-.0660	.1835	.0357	.0052
Initial Conf	.3586	.0056	.0042	.1887	.1280	-.2988
RWB	-.2851	-.4009*	.2415	-.2724	-.2935	.2818
EWB	-.1223	-.2264	.1571	-.2444	-.2222	.2427
SWB	-.2569	-.3893*	.2447	-.3081	-.3125	.3136
Rotter I-E	.0862	.3353	-.0418	.1337	.0917	.0615
HIS	.0440	-.2404	.1280	-.0465	-.1714	-.0691
AGE	-.3627	-.2150	-.0090	-.2504	-.2423	.2638
SEX	-.1532	.0710	-.1752	-.2061	-.0974	.2142
Education	.0337	.0513	-.1377	.0434	-.0125	-.0803
Income	-.0181	.0509	.1911	-.0342	-.0692	-.0524
Day1 Conf	.1179	.0433	.0235	.1888	.1108	-.2689
Diff	-.0281	.1036	-.1955	-.1018	-.0333	-.1576
Cigs	-.1195	-.2096	-.1170	-.0345	-.0780	.0164
Day2 Conf	.5574**	.2699	-.0089	.3521	.4073*	-.3579
Diff	.2311	.2007	-.0803	.1990	.3021	-.3791
Cigs	-.1716	-.1845	.1556	-.2389	-.1606	.1646
Day3 Conf	.6130**	.5587**	.1405	.4727*	.6453**	-.4504*
Diff	.3774	.4989**	-.0258	.2044	.4300*	-.3504
Cigs	-.5676**	-.3053	-.0564	-.7343**	-.6690**	.7909**
Day4 Conf	.6280**	.3851*	.0972	.5830**	.7378**	-.2785
Diff	.4554*	.5546**	.0377	.3123	.6374**	-.3916
Cigs	.0553	-.0689	-.0564	-.1199	-.1719	.2296
Day5 Conf	1.0000	.6324**	-.0062	.8565**	.8590**	-.7780**
Diff	.6324**	1.0000	-.0355	.4597*	.6882**	-.4086*
Cigs	-.0062	-.0355	1.0000	.1027	.0258	-.0679
Day9 Conf	.8565**	.4597*	.1027	1.0000	.7940**	-.8095**
Diff	.8590**	.6882**	.0258	.7940**	1.0000	-.7556**
Cigs	-.7780**	-.4086*	-.0679	-.8095**	-.7556**	1.0000
Graduation	.3337	.1119	.0918	.4607*	.3427	-.4291*
Cigs at 8m	-.3776	-.2252	-.1741	-.3073	-.3010	.3598
LSTSMK	.2048	.2463	.2085	.1727	.1744	-.2468
FSTSMK	.3366	.4183*	.1751	.3381	.2830	-.3846
Conf now	.3595	.3153	.1380	.1823	.2773	-.2073
Hope group	.0143	-.3197	.1703	-.0415	-.1832	-.1388
Nonsmoking	.2736	.1290	.1945	.2717	.2101	-.2727

Minimum pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your last cigarette?
FSTSMK= first cigarette after Smoke Free was over

Correlations:	GRD	Cigs 8m	LSTSMK	FSTSMK	Conf now	Hope grp	Nonsmoking
Feedback	.0356	.2002	-.1360	-.0882	-.2311	-.0125	-.0512
Smoke Hist	-.1953	.2955	-.2331	-.2201	-.2548	.2060	-.1241
Quit Hist	-.0427	-.0520	-.0850	-.1050	-.0180	-.0947	.0311
Abstinence	-.2851	.1996	-.1426	-.2072	-.1941	.0056	-.0934
Initial Conf	.1981	-.0532	.0309	-.0676	-.0338	.3269	.1933
RWB	.0510	-.1155	-.0407	-.0631	-.0081	.2914	.1181
EWB	-.0930	-.0548	-.0391	-.1436	-.0202	.3568*	.0928
SWB	-.0097	-.1065	-.0471	-.1135	-.0152	.3747*	.1265
Rotter I-E	-.2924	.2402	.1018	.1252	-.1056	-.4120*	-.1785
HIS	.2983	-.4105*	.2699	.1493	.2762	.9084**	.4257*
AGE	-.3326	.3448	-.2494	-.2750	-.3081	.2110	-.1560
SEX	-.1643	.3456	-.1615	-.0675	-.1796	-.2615	-.2817
Education	.1882	.0272	.0924	.0585	.0773	.0584	-.0337
Income	.2179	-.3712*	.3364	.3398	.3006	.3651*	.3340
Day1 Conf	-.1796	.3525	-.1850	-.2238	-.3206	-.1643	-.2640
Diff	.0275	-.0874	.2796	.0925	.0209	.2342	.0395
Cigs	.2657	-.1191	.0408	-.0188	.1408	.1324	.0839
Day2 Conf	.1085	-.1848	.1563	.1683	.0846	.2523	.3014
Diff	-.0610	.0528	.1258	.0776	-.0749	-.1261	-.0790
Cigs	-.5463**	.2357	-.1876	-.2839	-.2160	-.0207	-.2804
Day3 Conf	.2341	-.4345*	.3846*	.4185*	.3505	.2409	.4049*
Diff	.0019	-.1319	.3861*	.3005	-.0180	.2115	.1823
Cigs	-.4855**	.2556	-.1573	-.2683	-.1948	-.1177	-.3027
Day4 Conf	.3257	-.3114	.2165	.2449	.1836	-.1004	.2507
Diff	.2434	-.2877	.3021	.2283	.1614	-.1075	.2935
Cigs	-.2084	.2056	-.2711	-.3480	.0486	-.0836	-.2770
Day5 Conf	.3337	-.3776	.2048	.3366	.3595	.0143	.2736
Diff	.1119	-.2252	.2463	.4183*	.3153	-.3197	.1290
Cigs	.0918	-.1741	.2085	.1751	.1380	.1703	.1945
Day9 Conf	.4607*	-.3073	.1727	.3381	.1823	-.0415	.2717
Diff	.3427	-.3010	.1744	.2830	.2773	-.1832	.2101
Cigs	-.4291*	.3598	-.2468	-.3846	-.2073	-.1388	-.2727
Graduation	1.0000	-.6303**	.3810*	.5181**	.5168**	.2427	.5421**
Cigs at 8m	-.6303**	1.0000	-.7863**	-.7556**	-.7903**	-.3780*	-.8804**
LSTSMK	.3810*	-.7863**	1.0000	.8520**	.6271**	.2234	.7492**
FSTSMK	.5181**	-.7556**	.8520**	1.0000	.6658**	.1232	.6373**
Conf now	.5168**	-.7903**	.6271**	.6658**	1.0000	.2375	.6585**
Hope group	.2427	-.3780*	.2234	.1232	.2375	1.0000	.4100*
Nonsmoking	.5421**	-.8804**	.7492**	.6373**	.6585**	.4100*	1.0000

Minimum pairwise N of cases: 32 Significance: * - .01 ** - .001

LSTSMK= when was your last cigarette?
FSTSMK= first cigarette after Smoke Free was over

Appendix N

Complete ANOVA and One-way ANOVA Results

for Hypotheses 7 and 8

*** CELL MEANS ***

Day 2 Conf
BY Hope Group
Feedback

TOTAL POPULATION

6.03
(37)

HGRP

1	2	3
5.63	5.93	6.33
(8)	(14)	(15)

FB

0	1
5.75	6.35
(20)	(17)

HGRP	FB 0	FB 1
1	5.00 (5)	6.67 (3)
2	5.43 (7)	6.43 (7)
3	6.50 (8)	6.14 (7)

*** CELL MEANS ***

Day 3 Conf
BY Hope Group
Feedback

TOTAL POPULATION

5.97
(37)

HGRP

1	2	3
5.63	6.00	6.13
(8)	(14)	(15)

FB

0	1
5.80	6.18
(20)	(17)

HGRP	FB 0	FB 1
1	5.00	6.67
	(5)	(3)
2	5.57	6.43
	(7)	(7)
3	6.50	5.71
	(8)	(7)

*** CELL MEANS ***

Day 4 Conf
BY Hope Group
Feedback

TOTAL POPULATION

6.09
(37)

HGRP

1	2	3
6.50	6.00	5.96
(8)	(14)	(15)

FB

0	1
6.25	5.90
(20)	(17)

HGRP	FB 0	FB 1
1	6.20 (5)	7.00 (3)
2	6.00 (7)	6.00 (7)
3	6.50 (8)	5.33 (7)

*** CELL MEANS ***

Day 5 Conf
BY Hope Group
Feedback

TOTAL POPULATION

6.04
(37)

HGRP

1	2	3
5.88	6.17	6.00
(8)	(14)	(15)

FB

0	1
5.95	6.14
(20)	(17)

HGRP	FB 0	FB 1
1	5.20 (5)	7.00 (3)
2	6.00 (7)	6.35 (7)
3	6.38 (8)	5.57 (7)

*** CELL MEANS ***

Day 9 Conf
BY Hope Group
Feedback

TOTAL POPULATION

6.18
(37)

HGRP

1	2	3
5.91	6.54	5.99
(8)	(14)	(15)

FB

0	1
6.06	6.31
(20)	(17)

HGRP	FB 0	FB 1
1	5.25 (5)	7.00 (3)
2	6.57 (7)	6.50 (7)
3	6.13 (8)	5.83 (7)

* * * ANALYSIS OF VARIANCE * * *

Day 2 Conf
BY HGRP
FB

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	5.910	3	1.970	2.915	.050
HGRP	2.836	2	1.418	2.098	.140
FB	3.074	1	3.074	4.549	.041
2-way Interactions	6.110	2	3.055	4.520	.019
HGRP FB	6.110	2	3.055	4.520	.019
Explained	12.021	5	2.404	3.557	.012
Residual	20.952	31	.676		
Total	32.973	36	.916		

45 Cases were processed.
8 CASES (17.8 PCT) were missing.

* * * ANALYSIS OF VARIANCE * * *

Day 3 Conf
BY HGRP
FB

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	2.483	3	.828	.649	.589
HGRP	1.365	2	.682	.535	.591
FB	1.118	1	1.118	.877	.356
2-way Interactions	8.966	2	4.483	3.516	.042
HGRP FB	8.966	2	4.483	3.516	.042
Explained	11.449	5	2.290	1.796	.143
Residual	39.524	31	1.275		
Total	50.973	36	1.416		

45 Cases were processed.
8 CASES (17.8 PCT) were missing.

* * * ANALYSIS OF VARIANCE * * *

Day 4 Conf
BY HGRP
FB

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	2.627	3	.876	.398	.755
HGRP	1.730	2	.865	.394	.678
FB	.896	1	.896	.408	.528
2-way Interactions	5.389	2	2.695	1.226	.307
HGRP FB	5.389	2	2.695	1.226	.307
Explained	8.016	5	1.603	.729	.607
Residual	68.133	31	2.198		
Total	76.149	36	2.115		

45 Cases were processed.
8 CASES (17.8 PCT) were missing.

* * * ANALYSIS OF VARIANCE * * *

Day 5 Conf
BY HGRP
FB

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	.769	3	.256	.125	.945
HGRP	.492	2	.246	.120	.888
FB	.278	1	.278	.135	.716
2-way Interactions	8.630	2	4.315	2.099	.140
HGRP FB	8.630	2	4.315	2.099	.140
Explained	9.399	5	1.880	.914	.485
Residual	63.731	31	2.056		
Total	73.130	36	2.031		

45 Cases were processed.
8 CASES (17.8 PCT) were missing.

* * * ANALYSIS OF VARIANCE * * *

Day 9 Conf
BY HGRP
FB

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	3.333	3	1.111	.642	.594
HGRP	2.920	2	1.460	.843	.440
FB	.413	1	.413	.239	.629
2-way Interactions	5.665	2	2.833	1.636	.211
HGRP FB	5.665	2	2.833	1.636	.211
Explained	8.999	5	1.800	1.039	.412
Residual	53.673	31	1.731		
Total	62.671	36	1.741		

45 Cases were processed.
8 CASES (17.8 PCT) were missing.

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LOW HOPE GROUP
Variable Day 1
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	1.4318	1.4318	1.9091	.2004
Within Groups	9	6.7500	.7500		
Total	10	8.1818			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8000, P = .154 (Approx.)
Bartlett-Box F = 1.395 , P = .239
Maximum Variance / Minimum Variance 4.000

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Variable Day 2 Conf
By Variable Feedaback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	4.9000	4.9000	7.5385	.0252
Within Groups	8	5.2000	.6500		
Total	9	10.1000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .6154, P = .660 (Approx.)
Bartlett-Box F = .194 , P = .660
Maximum Variance / Minimum Variance 1.600

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LOW HOPE GROUP
Variable Day 1
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	1.4318	1.4318	1.9091	.2004
Within Groups	9	6.7500	.7500		
Total	10	8.1818			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8000, P = .154 (Approx.)
Bartlett-Box F = 1.395 , P = .239
Maximum Variance / Minimum Variance 4.000

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Variable Day 2 Conf
By Variable Feedaback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	4.9000	4.9000	7.5385	.0252
Within Groups	8	5.2000	.6500		
Total	9	10.1000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .6154, P = .660 (Approx.)
Bartlett-Box F = .194 , P = .660
Maximum Variance / Minimum Variance 1.600

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Variable Day 3 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.5121	.5121	.1918	.6718
Within Groups	9	24.0333	2.6704		
Total	10	24.5455			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .5633, P = .787 (Approx.)
Bartlett-Box F = .064 , P = .801
Maximum Variance / Minimum Variance 1.290

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Variable Day 4 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	1.2000	1.2000	9.0000	.0240
Within Groups	6	.8000	.1333		
Total	7	2.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = 1.0000, P = . (Approx.)
Bartlett-Box F = . , P = 0.0
Maximum Variance / Minimum Variance .

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Variable Day 5 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	6.0750	6.0750	1.5987	.2530
Within Groups	6	22.8000	3.8000		
Total	7	28.8750			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = 1.0000, P = . (Approx.)
Bartlett-Box F = . , P = 0.0
Maximum Variance / Minimum Variance .

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Variable Day 9 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	5.2500	5.2500	1.0606	.3503
Within Groups	5	24.7500	4.9500		
Total	6	30.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = 1.0000, P = . (Approx.)
Bartlett-Box F = . , P = 0.0
Maximum Variance / Minimum Variance .

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AVERAGE HOPE GROUP
Variable Day 1 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.0714	.0714	.0370	.8506
Within Groups	12	23.1429	1.9286		
Total	13	23.2143			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .5926, P = .661 (Approx.)
Bartlett-Box F = .193 , P = .661
Maximum Variance / Minimum Variance 1.455

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Variable Day 2 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	6.2500	6.2500	7.6087	.0154
Within Groups	14	11.5000	.8214		
Total	15	17.7500			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8261, P = .057 (Approx.)
Bartlett-Box F = 3.636 , P = .057
Maximum Variance / Minimum Variance 4.750

----------ONEWAY----------

Variable Day 3 Conf
By Variable Feedaback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	4.0000	4.0000	9.3333	.0086
Within Groups	14	6.0000	.4286		
Total	15	10.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .6667, P = .381 (Approx.)
Bartlett-Box F = .769 , P = .381
Maximum Variance / Minimum Variance 2.000

----------ONEWAY----------

Variable Day 4 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.0583	.0583	.0217	.8850
Within Groups	13	34.8750	2.6827		
Total	14	34.9333			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8687, P = .023 (Approx.)
Bartlett-Box F = 4.556 , P = .033
Maximum Variance / Minimum Variance 6.616

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Variable Day 5 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.6429	.6429	1.3500	.2679
Within Groups	12	5.7143	.4762		
Total	13	6.3571			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .7000, P = .326 (Approx.)
Bartlett-Box F = .966 , P = .326
Maximum Variance / Minimum Variance 2.333

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Variable Day 9 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.0165	.0165	.0348	.8555
Within Groups	11	5.2143	.4740		
Total	12	5.2308			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .6736, P = .399 (Approx.)
Bartlett-Box F = .628 , P = .429
Maximum Variance / Minimum Variance 2.063

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HIGH HOPE GROUP
Variable Day 1 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.0159	.0159	.0106	.9195
Within Groups	14	20.9841	1.4989		
Total	15	21.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .9434, P = .001 (Approx.)
Bartlett-Box F = 11.116 , P = .001
Maximum Variance / Minimum Variance 16.653

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Variable Day 2 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.3581	.3581	.5522	.4697
Within Groups	14	9.0794	.6485		
Total	15	9.4375			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8045, P = .082 (Approx.)
Bartlett-Box F = 3.165 , P = .076
Maximum Variance / Minimum Variance 4.114

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Variable Day 3 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	2.3048	2.3048	1.5422	.2362
Within Groups	13	19.4286	1.4945		
Total	14	21.7333			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .9104, P = .007 (Approx.)
Bartlett-Box F = 7.137 , P = .008
Maximum Variance / Minimum Variance 10.167

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Variable Day 4 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	5.3778	5.3778	2.0834	.1726
Within Groups	13	33.5556	2.5812		
Total	14	38.9333			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8314, P = .052 (Approx.)
Bartlett-Box F = 3.714 , P = .055
Maximum Variance / Minimum Variance 4.930

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Variable Day 5 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	2.2857	2.2857	.8960	.3599
Within Groups	14	35.7143	2.5510		
Total	15	38.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .8220, P = .061 (Approx.)
Bartlett-Box F = 3.680 , P = .056
Maximum Variance / Minimum Variance 4.619

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Variable Day 9 Conf
By Variable Feedback

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	.2917	.2917	.1476	.7075
Within Groups	12	23.7083	1.9757		
Total	13	24.0000			

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .5409, P = .847 (Approx.)
Bartlett-Box F = .036 , P = .849
Maximum Variance / Minimum Variance 1.178

Appendix O

Multiple Regression Analyses of Daily Confidence Measures and HIS Scores in Relation to Graduation

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****** MULTIPLE REGRESSION ******

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. Graduation

Beginning Block Number 1. Method: Enter Conf day 9

Variable(s) Entered on Step Number
1.. Conf day 1

Multiple R	.44831
R Square	.20099
Adjusted R Square	.17139
Standard Error	.39642

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	1.06731	1.06731
Residual	27	4.24304	.15715

F = 6.79165 Signif F = .0147

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 1	.13399	.05141	.44831	2.606	.0147
(Constant)	-.06381	.32405		-.197	.8454

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Conf day 5	-.19333	-.11340	.27492	-.582	.5656
Conf day 4	-.08208	-.07488	.66505	-.383	.7049
Conf day 3	-.10701	-.10646	.79070	-.546	.5898
Conf day 2	-.16644	-.17573	.89066	-.910	.3711
Conf day 1	-.37819	-.40303	.90741	-2.245	.0335

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**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 2. Method: Enter Conf day 5

Variable(s) Entered on Step Number
2.. Conf day 5

Multiple R	.45963
R Square	.21126
Adjusted R Square	.15059
Standard Error	.40137

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1.12187	.56093
Residual	26	4.18848	.16110

F = 3.48201 Signif F = .0457

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 6	.18319	.09928	.61294	1.845	.0764
Conf day 5	-.05375	.09236	-.19333	-.582	.5656
(Constant)	-.04884	.32910		-.148	.8832

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Con day 4	-1.096E-03	-.00076	.15687	-.004	.9970
Conf day 3	-.05199	-.03626	.13341	-.181	.8575
Conf day 2	-.15679	-.13588	.18286	-.686	.4992
Conf day 1	-.39454	-.42065	.25724	-2.318	.0289

End Block Number 2 All requested variables entered.

* * * * MULTIPLE REGRESSION * * * *

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 3. Method: Enter Conf day 4

Variable(s) Entered on Step Number
3.. Conf day 4

Multiple R	.45963
R Square	.21126
Adjusted R Square	.11661
Standard Error	.40932

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	1.12187	.37396
Residual	25	4.18847	.16754

F = 2.23206 Signif F = .1093

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 9	.18310	.10427	.61262	1.756	.0913
5	-.05344	.12469	-.19221	-.429	.6719
4	-3.71935E-04	.09782	-1.096E-03	-.004	.9970
(Constant)	-.04779	.43384		-.110	.9132

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Conf day3	-.07427	-.04309	.12570	-.211	.8345
Conf day 2	-.16788	-.14050	.13718	-.695	.4936
Conf day 1	-.42626	-.43733	.15535	-2.382	.0255

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 4. Method: Enter Conf day 3

Variable(s) Entered on Step Number
4.. Conf day 3

Multiple R	.46122
R Square	.21273
Adjusted R Square	.08151
Standard Error	.41737

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	4	1.12965	.28241
Residual	24	4.18070	.17420

F = 1.62123 Signif F = .2014

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 9	.17384	.11500	.58163	1.512	.1437
5	-.04007	.14204	-.14410	-.282	.7803
4	.01369	.11992	.04036	.114	.9100
3	-.03132	.14824	-.07427	-.211	.8345
(Constant)	.02911	.57287		.051	.9599

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Conf day 2	-.18665	-.13685	.12324	-.663	.5142
1	-.42560	-.43698	.12490	-2.330	.0289

End Block Number 4 All requested variables entered.

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 5. Method: Enter Conf day 2

Variable(s) Entered on Step Number
5.. Conf day 2

Multiple R	.47694
R Square	.22747
Adjusted R Square	.05953
Standard Error	.42233

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	5	1.20794	.24159
Residual	23	4.10240	.17837

F = 1.35446 Signif F = .2776

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 9	.16428	.11726	.54966	1.401	.1746
5	-.02663	.14515	-.09579	-.183	.8560
4	9.569116E-03	.12151	.02821	.079	.9379
3	.02361	.17139	.05599	.138	.8916
2	-.08435	.12732	-.18665	-.663	.5142
(Constant)	.21435	.64359		.333	.7421

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Conf day 1	-.41500	-.42344	.12287	-2.192	.0392

End Block Number 5 All requested variables entered.

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 6. Method: Enter Conf day 1

Variable(s) Entered on Step Number
6.. Conf day 1

Multiple R	.60496
R Square	.36598
Adjusted R Square	.19307
Standard Error	.39120

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	6	1.94349	.32392
Residual	22	3.36685	.15304

F = 2.11656 Signif F = .0923

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 9	.21504	.11106	.71948	1.936	.0658
5	-.01034	.13466	-.03718	-.077	.9395
4	-.04974	.11575	-.14660	-.430	.6716
3	-4.29090E-04	.15913	-1.018E-03	-.003	.9979
2	-.03816	.11980	-.08443	-.319	.7531
1	-.16726	.07629	-.41500	-2.192	.0392
(Constant)	1.02446	.70139		1.461	.1583

End Block Number 6 All requested variables entered.

**** MULTIPLE REGRESSION ****

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. Graduation

Beginning Block Number 1. Method: Stepwise

Variable(s) Entered on Step Number
1.. Cigs smoked day 3

Multiple R	.43272
R Square	.18725
Adjusted R Square	.15922
Standard Error	.40786

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	1.11141	1.11141
Residual	29	4.82407	.16635

F = 6.68126 Signif F = .0150

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Cigs day 3	-.56481	.21851	-.43272	-2.585	.0150
(Constant)	1.37963	.25735		5.361	.0000

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Cigs day 1	.34759	.38531	.99872	2.209	.0355
2	-.31898	-.34712	.96245	-1.959	.0602
4	-.10836	-.10230	.72443	-.544	.5906
5	.07765	.08592	.99506	.456	.6517
9	-.20082	-.13742	.38056	-.734	.4690

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. GRD

Variable(s) Entered on Step Number
2.. Cigs day 1

Multiple R	.55490
R Square	.30792
Adjusted R Square	.25848
Standard Error	.38303

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1.82762	.91381
Residual	28	4.10786	.14671

F = 6.22873 Signif F = .0058

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Cigs day 3	-.58106	.20534	-.44517	-2.830	.0085
1	.07974	.03609	.34759	2.209	.0355
(Constant)	.97353	.30363		3.206	.0034

Variables not in the Equation

Variable	Beta In	Partial	Min Toler	T	Sig T
Cigs day 2	-.20789	-.22307	.79689	-1.189	.2448
4	-.15719	-.15976	.71492	-.841	.4078
5	.12290	.14622	.97964	.768	.4491
9	-.21126	-.15663	.38043	-.824	.4171

End Block Number 1 PIN = .050 Limits reached.

*** * * * MULTIPLE REGRESSION * * * ***

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. GRD

Beginning Block Number 1. Method: Enter Conf day 9 and HIS

Variable(s) Entered on Step Number
1.. Conf day 9
2.. HIS

Multiple R	.47789
R Square	.22838
Adjusted R Square	.17694
Standard Error	.37663

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	1.25957	.62978
Residual	30	4.25558	.14185

F = 4.43971 Signif F = .0205

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
Conf day 9	.13997	.04809	.46747	2.911	.0067
HIS	1.073915E-03	1.353928E-03	.12739	.793	.4339
(Constant)	-.44939	.56861		-.790	.4355

End Block Number 1 All requested variables entered.

Appendix P

Statistical Analyses of Post-Treatment Expectations

*** CELL MEANS ***

Confidence of becoming/remaining nonsmoker at 8 month followup
BY Smoking/Nonsmoking group

TOTAL POPULATION

5.31
(42)

NONSMK

0	1
4.28	6.82
(25)	(17)

*** ANALYSIS OF VARIANCE ***

NWCON
BY NONSMK

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	65.466	1	65.466	30.623	.000
NONSMK	65.466	1	65.466	30.623	.000
Explained	65.466	1	65.466	30.623	.000
Residual	85.511	40	2.138		
Total	150.976	41	3.682		

45 Cases were processed.
3 CASES (6.7 PCT) were missing.

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Variable Confidence at 8 month followup of becoming/remainig a nonsmoker
By Variable Nonsmoking/ Smoking group

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	65.4656	65.4656	30.6234	.0000
Within Groups	40	85.5106	2.1378		
Total	41	150.9762			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 0	25	4.2800	1.8601	.3720	3.5122 To 5.0478
Grp 1	17	6.8235	.3930	.0953	6.6215 To 7.0256
Total	42	5.3095	1.9189	.2961	4.7115 To 5.9075
Fixed Effects Model			1.4621	.2256	4.8536 To 5.7655
Random Effects Model				1.2931	-11.1215 To 21.7405

Random Effects Model - Estimate of Between Component Variance 3.1291

Group	Minimum	Maximum
Grp 0	1.0000	7.0000
Grp 1	6.0000	7.0000
Total	1.0000	7.0000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .9573, P = 0.0 (Approx.)
Bartlett-Box F = 29.906 , P = .000
Maximum Variance / Minimum Variance 22.408

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Variable Confidence at 8 month followup of becoming/remaining a nonsmoker
By Variable Nongraduation/ Graduation Group

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	40.3184	40.3184	14.5741	.0005
Within Groups	40	110.6578	2.7664		
Total	41	150.9762			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 0	13	3.8462	1.9936	.5529	2.6414 To 5.0509
Grp 1	29	5.9655	1.4996	.2785	5.3951 To 6.5359
Total	42	5.3095	1.9189	.2961	4.7115 To 5.9075
Fixed Effects Model			1.6633	.2566	4.7908 To 5.8282
Random Effects Model				1.1241	-8.9731 To 19.5921

Random Effects Model - Estimate of Between Component Variance 2.0918

Group	Minimum	Maximum
Grp 0	1.0000	7.0000
Grp 1	2.0000	7.0000
Total	1.0000	7.0000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .6386, P = .212 (Approx.)
Bartlett-Box F = 1.409 , P = .235
Maximum Variance / Minimum Variance 1.767

Appendix Q

Statistical Analyses of Relations Between Previous Smoking Behavior and Outcome

Crosstabulation: Graduation
By Quitting History Group

		1	2	3	4	5	6	7	Row Total
GRD	Count								
	Exp Val								
	Row Pct								
	Col Pct								
	Tot Pct								
	Residual								
QTHXD)	Std Res								
	Adj Res								
0		4	4	1	1	2	1	0	14
		2.9	4.1	2.2	2.2	.6	1.0	.6	31.8%
		28.6%	28.6%	7.1%	7.1%	14.3%	7.1%	0.0%	
		44.4%	30.8%	14.3%	14.3%	100.0%	33.3%	0.0%	
		9.1%	9.1%	2.3%	2.3%	4.5%	2.3%	0.0%	
		1.1	-.1	-1.2	-1.2	1.4	.0	-.6	
		.7	-.1	-.8	-.8	1.7	.0	-.8	
		.9	-.1	-1.1	-1.1	2.1	.1	-1.0	
1		5	9	6	6	0	2	2	30
		6.1	8.9	4.8	4.8	1.4	2.0	1.4	68.2%
		16.7%	30.0%	20.0%	20.0%	0.0%	6.7%	6.7%	
		55.6%	69.2%	85.7%	85.7%	0.0%	66.7%	100.0%	
		11.4%	20.5%	13.6%	13.6%	0.0%	4.5%	4.5%	
		-1.1	.1	1.2	1.2	-1.4	-.0	.6	
		-.5	.0	.6	.6	-1.2	-.0	.5	
		-.9	.1	1.1	1.1	-2.1	-.1	1.0	
Column Total		9 20.5%	13 29.5%	7 15.9%	7 15.9%	2 4.5%	3 6.8%	2 4.5%	44 100.0%

(Continued)

Crosstabulation: Graduation
By Quitting History Group

Continued from previous page

	Residual	3	
QTHXD)	Std Res	3	3 Row
	Adj Res	3	10 3 Total
GRD	DDDDDDDDEDDDDDDDE		
	0	3	1 3 14
		3	.3 3 31.8%
		3	7.1% 3
		3	100.0% 3
		3	2.3% 3
		3	.7 3
		3	1.2 3
		3	1.5 3
		EDDDDDDDDE	
	1	3	0 3 30
		3	.7 3 68.2%
		3	0.0% 3
		3	0.0% 3
		3	0.0% 3
		3	-.7 3
		3	-.8 3
		3	-1.5 3
		EDDDDDDDDE	
	Column Total		1 44
			2.3% 100.0%

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
10.01672	7	.1876	.318	14 OF 16 (87.5%)

Number of Missing Observations = 1

Crosstabulation: Graduation
By Smoking History Group

SMKHXD)		4	5	6	7	8	9	Row Total
6RD								
0	Count	0	2	0	4	5	3	14
	Exp Val	.3	1.6	2.2	3.2	5.1	1.6	31.8%
	Row Pct	0.0%	14.3%	0.0%	28.6%	35.7%	21.4%	
	Col Pct	0.0%	40.0%	0.0%	40.0%	31.3%	60.0%	
	Tot Pct	0.0%	4.5%	0.0%	9.1%	11.4%	6.8%	
	Residual	-.3	.4	-2.2	.8	-.1	1.4	
	Std Res	-.6	.3	-1.5	.5	-.0	1.1	
	Adj Res	-.7	.4	-2.0	.6	-.1	1.4	
1	Count	1	3	7	6	11	2	30
	Exp Val	.7	3.4	4.8	6.8	10.9	3.4	68.2%
	Row Pct	3.3%	10.0%	23.3%	20.0%	36.7%	6.7%	
	Col Pct	100.0%	60.0%	100.0%	60.0%	68.8%	40.0%	
	Tot Pct	2.3%	6.8%	15.9%	13.6%	25.0%	4.5%	
	Residual	.3	-.4	2.2	-.8	.1	-1.4	
	Std Res	.4	-.2	1.0	-.3	.0	-.8	
	Adj Res	.7	-.4	2.0	-.6	.1	-1.4	
Column Total		1 2.3%	5 11.4%	7 15.9%	10 22.7%	16 36.4%	5 11.4%	44 100.0%

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
6.02905	5	.3034	.318	9 OF 12 (75.0%)

Number of Missing Observations = 1

---------- STATISTICS FOR ----------

Graduation
BY Abstinence History Group
Number of Valid Observations = 44

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
24.25587	21	.2808	.318	44 OF 44 (100.0%)

Number of Missing Observations = 1

---------- STATISTICS FOR ----------

Nonsmoking at 8 months
BY Smoking History
Number of Valid Observations = 45

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
5.07381	5	.4069	.378	9 OF 12 (75.0%)

Number of Missing Observations = 0

---------- STATISTICS FOR ----------

Nonsmoking at 8 months
BY Quitting History Group
Number of Valid Observations = 45

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
7.95234	7	.3368	.378	14 OF 16 (87.5%)

Number of Missing Observations = 0

---------- STATISTICS FOR ----------

Nonsmoking at 8 months
BY Abstinence History
Number of Valid Observations = 45

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
20.75105	21	.4742	.378	44 OF 44 (100.0%)

Number of Missing Observations = 0

Appendix R

Statistical Analyses of Relations Between Demographics and Outcome

Crosstabulation: Graduation By Income

Grad (INCMD)		1	2	3	4	5	6	7	Row Total
0	Count	1	1	4	4	3	1	0	14
	Exp Val	.6	1.0	2.9	3.8	3.2	1.6	1.0	31.8%
	Row Pct	7.1%	7.1%	28.6%	28.6%	21.4%	7.1%	0.0%	
	Col Pct	50.0%	33.3%	44.4%	33.3%	30.0%	20.0%	0.0%	
	Tot Pct	2.3%	2.3%	9.1%	9.1%	6.8%	2.3%	0.0%	
	Residual	.4	.0	1.1	.2	-.2	-.6	-1.0	
	Std Res	.5	.0	.7	.1	-.1	-.5	-1.0	
	Adj Res	.6	.1	.9	.1	-.1	-.6	-1.2	
1	Count	1	2	5	8	7	4	3	30
	Exp Val	1.4	2.0	6.1	8.2	6.8	3.4	2.0	68.2%
	Row Pct	3.3%	6.7%	16.7%	26.7%	23.3%	13.3%	10.0%	
	Col Pct	50.0%	66.7%	55.6%	66.7%	70.0%	80.0%	100.0%	
	Tot Pct	2.3%	4.5%	11.4%	18.2%	15.9%	9.1%	6.8%	
	Residual	-.4	-.0	-1.1	-.2	.2	.6	1.0	
	Std Res	-.3	-.0	-.5	-.1	.1	.3	.7	
	Adj Res	-.6	-.1	-.9	-.1	.1	.6	1.2	
Column Total		2 4.5%	3 6.8%	9 20.5%	12 27.3%	10 22.7%	5 11.4%	3 6.8%	44 100.0%

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
2.71915	6	.8432	.636	11 OF 14 (78.6%)

Number of Missing Observations = 1

Crosstabulation: Nonsmoking at 8 months
By Income

INCMID)		1	2	3	4	5	6	7	Row Total
0	Count	2	3	6	9	5	1	2	28
	Exp Val	1.2	1.9	5.6	7.5	6.8	3.1	1.9	62.2%
	Row Pct	7.1%	10.7%	21.4%	32.1%	17.9%	3.6%	7.1%	
	Col Pct	100.0%	100.0%	66.7%	75.0%	45.5%	20.0%	66.7%	
	Tot Pct	4.4%	6.7%	13.3%	20.0%	11.1%	2.2%	4.4%	
	Residual	.8	1.1	.4	1.5	-1.8	-2.1	.1	
	Std Res	.7	.8	.2	.6	-.7	-1.2	.1	
	Adj Res	1.1	1.4	.3	1.1	-1.3	-2.1	.2	
1	Count	0	0	3	3	6	4	1	17
	Exp Val	.8	1.1	3.4	4.5	4.2	1.9	1.1	37.8%
	Row Pct	0.0%	0.0%	17.6%	17.6%	35.3%	23.5%	5.9%	
	Col Pct	0.0%	0.0%	33.3%	25.0%	54.5%	80.0%	33.3%	
	Tot Pct	0.0%	0.0%	6.7%	6.7%	13.3%	8.9%	2.2%	
	Residual	-.8	-1.1	-.4	-1.5	1.8	2.1	-.1	
	Std Res	-.9	-1.1	-.2	-.7	.9	1.5	-.1	
	Adj Res	-1.1	-1.4	-.3	-1.1	1.3	2.1	-.2	
Column Total		2 4.4%	3 6.7%	9 20.0%	12 26.7%	11 24.4%	5 11.1%	3 6.7%	45 100.0%

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. (5
9.07778	6	.1693	.756	11 OF 14 (78.6%)

Number of Missing Observations = 0

Crosstabulation: Graduation
By Marital Marital Status

		1	2	3	4	6	Row Total
GRD	Count						
	Exp Val						
	Row Pct						
	Col Pct						
	Tot Pct						
	Residual						
MSTATD)	Std Res						
	Adj Res						
0	Count	2	3	7	1	1	14
	Exp Val	1.9	8.0	3.5	.3	.3	31.8%
	Row Pct	14.3%	21.4%	50.0%	7.1%	7.1%	
	Col Pct	33.3%	12.0%	63.6%	100.0%	100.0%	
	Tot Pct	4.5%	6.8%	15.9%	2.3%	2.3%	
	Residual	.1	-5.0	3.5	.7	.7	
	Std Res	.1	-1.8	1.9	1.2	1.2	
	Adj Res	.1	-3.2	2.6	1.5	1.5	
1	Count	4	22	4	0	0	30
	Exp Val	4.1	17.0	7.5	.7	.7	68.2%
	Row Pct	13.3%	73.3%	13.3%	0.0%	0.0%	
	Col Pct	66.7%	88.0%	36.4%	0.0%	0.0%	
	Tot Pct	9.1%	50.0%	9.1%	0.0%	0.0%	
	Residual	-.1	5.0	-3.5	-.7	-.7	
	Std Res	-.0	1.2	-1.3	-.8	-.8	
	Adj Res	-.1	3.2	-2.6	-1.5	-1.5	
Column Total		6 13.6%	25 56.8%	11 25.0%	1 2.3%	1 2.3%	44 100.0%

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. (5
13.95149	4	.0075	.318	7 OF 10 (70.0%)

Number of Missing Observations = 1

Crosstabulation: Nonsmoking
By Marital Status

		1	2	3	4	6	Row Total
NONSMK	Count	3	12	11	1	1	28
	Exp Val	3.7	16.2	6.8	.6	.6	62.2%
	Row Pct	10.7%	42.9%	39.3%	3.6%	3.6%	
	Col Pct	50.0%	46.2%	100.0%	100.0%	100.0%	
	Tot Pct	6.7%	26.7%	24.4%	2.2%	2.2%	
	Residual	-.7	-4.2	4.2	.4	.4	
	Std Res	-.4	-1.0	1.6	.5	.5	
	Adj Res	-.7	-2.6	3.0	.8	.8	
	1 Count	3	14	0	0	0	17
	Exp Val	2.3	9.8	4.2	.4	.4	37.8%
	Row Pct	17.6%	82.4%	0.0%	0.0%	0.0%	
	Col Pct	50.0%	53.8%	0.0%	0.0%	0.0%	
	Tot Pct	6.7%	31.1%	0.0%	0.0%	0.0%	
	Residual	.7	4.2	-4.2	-.4	-.4	
	Std Res	.5	1.3	-2.0	-.6	-.6	
	Adj Res	.7	2.6	-3.0	-.8	-.8	
	Column Total	6 13.3%	26 57.8%	11 24.4%	1 2.2%	1 2.2%	45 100.0%

(MSTATD)

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F. < 5
11.13001	4	.0251	.378	7 OF 10 (70.0%)

Number of Missing Observations = 0

---------- STATISTICS FOR ----------
Graduation
BY Sex
Number of Valid Observations = 44

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F.< 5
.58649	1	.4438	6.682	None
1.18774	1	.2758	(Before Yates Correction)	

Number of Missing Observations = 1

---------- STATISTICS FOR ----------
Nonsmoking
BY Sex
Number of Valid Observations = 45

Chi-Square	D.F.	Significance	Min E.F.	Cells with E.F.< 5
2.50230	1	.1137	7.933	None
3.57218	1	.0588	(Before Yates Correction)	

Number of Missing Observations = 0

Appendix S

Statistical Analyses of Relations Between Instruments and Demographics

----------ONEWAY----------

Variable HIS
By Variable SEX

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	4506.7063	4506.7063	1.6250	.2092
Within Groups	43	119257.7381	2773.4358		
Total	44	123764.4444			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	21	343.8095	52.5810	11.4741	319.8749 To 367.7441
Grp 2	24	323.7500	52.7350	10.7645	301.4820 To 346.0180
Total	45	333.1111	53.0361	7.9062	317.1773 To 349.0449
Fixed Effects Model			52.6634	7.8506	317.2789 To 348.9434
Random Effects Model				10.0246	205.7363 To 460.4859

Random Effects Model - Estimate of Between Component Variance 77.3782

Group	Minimum	Maximum
Grp 1	240.0000	440.0000
Grp 2	230.0000	430.0000
Total	230.0000	440.0000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .5015, P = .989 (Approx.)
Bartlett-Box F = .000 , P = .989
Maximum Variance / Minimum Variance 1.006

----------ONEWAY----------

Variable HIS
By Variable Marital Status

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	4	13277.2650	3319.3162	1.2017	.3251
Within Groups	40	110487.1795	2762.1795		
Total	44	123764.4444			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	6	346.6667	59.5539	24.3128	284.1696 To 409.1637
Grp 2	26	343.0769	48.6431	9.5397	323.4295 To 362.7243
Grp 3	11	310.0000	57.9655	17.4773	271.0583 To 348.9417
Grp 4	1	290.0000			
Grp 6	1	290.0000			
Total	45	333.1111	53.0361	7.9062	317.1773 To 349.0449
Fixed Effects Model			52.5564	7.8347	317.2767 To 348.9455
Random Effects Model				9.8047	305.8895 To 360.3328

Random Effects Model - Estimate of Between Component Variance 84.2728

Group	Minimum	Maximum
Grp 1	270.0000	430.0000
Grp 2	240.0000	440.0000
Grp 3	230.0000	390.0000
Grp 4	290.0000	290.0000
Grp 6	290.0000	290.0000
Total	230.0000	440.0000

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Variable Rotter's Locus of Control
By Variable Marital Status

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	4	43.4708	10.8677	.5442	.7042
Within Groups	40	798.8403	19.9710		
Total	44	842.3111			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	6	8.3333	2.7325	1.1155	5.4658 To 11.2009
Grp 2	26	7.0385	4.8784	.9567	5.0680 To 9.0089
Grp 3	11	8.6364	4.0810	1.2305	5.8947 To 11.3780
Grp 4	1	12.0000			
Grp 6	1	9.0000			
Total	45	7.7556	4.3753	.6522	6.4411 To 9.0700
Fixed Effects Model			4.4689	.6662	6.4091 To 9.1020
Random Effects Model				.6662	5.9060 To 9.6051

WARNING - Between component variance is negative
it was replaced by 0.0 in computing above random effects measures

Random Effects Model - Estimate of Between Component Variance -1.3770

Group	Minimum	Maximum
Grp 1	4.0000	11.0000
Grp 2	0.0	17.0000
Grp 3	2.0000	15.0000
Grp 4	12.0000	12.0000
Grp 6	9.0000	9.0000
Total	0.0	17.0000

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Variable SWB
By Variable SEX

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	201.4286	201.4286	.7390	.3949
Within Groups	42	11447.5487	272.5607		
Total	43	11648.9773			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	21	90.7619	17.5440	3.8284	82.7760 To 98.7478
Grp 2	23	86.4783	15.5091	3.2339	79.7716 To 93.1849
Total	44	88.5227	16.4592	2.4813	83.5187 To 93.5268
Fixed Effects Model			16.5094	2.4889	83.4999 To 93.5455
Random Effects Model				2.4889	56.8984 To 120.1470

WARNING - Between component variance is negative
it was replaced by 0.0 in computing above random effects measures

Random Effects Model - Estimate of Between Component Variance -3.2400

Group	Minimum	Maximum
Grp 1	63.0000	119.0000
Grp 2	57.0000	119.0000
Total	57.0000	119.0000

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Variable Rotter's Locus of Control Scale
By Variable SEX

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	19.7337	19.7337	1.0316	.3155
Within Groups	43	822.5774	19.1297		
Total	44	842.3111			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	21	7.0476	4.7904	1.0453	4.8671 To 9.2282
Grp 2	24	8.3750	3.9762	.8116	6.6960 To 10.0540
Total	45	7.7556	4.3753	.6522	6.4411 To 9.0700
Fixed Effects Model			4.3738	.6520	6.4407 To 9.0704
Random Effects Model				.6623	-.6598 To 16.1709

Random Effects Model - Estimate of Between Component Variance .0270

Group	Minimum	Maximum
Grp 1	0.0	17.0000
Grp 2	2.0000	16.0000
Total	0.0	17.0000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .5921, P = .389 (Approx.)
Bartlett-Box F = .728 , P = .394
Maximum Variance / Minimum Variance 1.451

Appendix T

Raw Data Matrix and Coding Key

Key for data matrix

A. Id #
B. feedback (0=no, 1=yes)
C. smoking history
D. quitting history
E. abstinence history (months)
F. initial confidence of grad. Smoke Free
G. Religious wellbeing
H. Existential wellbeing
I. Spiritual wellbeing
J. Rotter I-E scale
K. Hope Index scale
L. age
M. sex (1=male, 2=female)
N. education (years)
O. income
P. marital status
R. graduation (0=no, 1=yes)
S. number of cigarettes you currently smoke per day
T. last time subject had smoked (months, with 2 decimals)
U. time between graduation and first smoke (months, 2 decimals)
V. post-treatment confidence of becoming/remaining a nonsmoker
W. Hope group (1=low; 2=average; 3=high)
X. followup smoking status (0=smoker; 1=nonsmoker)

a. confidence of becoming a nonsmoker by the end of Smoke Free
b. degree of difficulty experienced in quitting today
c. number of cigarettes consumed today

																Day 1			Day 2			Day 3		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	a	b	c	a	b	c	a	b	c
01	1	8	05	00400	7	53	44	097	13	240	42	2	14	3	3	7	9	7	7	6	2	4	3	1
02	1	7	04	00600	6	38	52	090	07	340	30	1	18	4	2	4	5	5	6	3	1	6	3	2
03	1	8	07	00600	6	59	50	109	02	350	46	1	12	5	2	2	3	7	6	2	1	7	3	1
04	0	8	02	00100	7	38	32	070	06	250	34	1	13	1	2	6	3	7	4	4	1	2	1	1
05	1	6	02	00025	5	51	51	102	06	330	30	1	12	5	2	3	3	4	7	3	1	7	4	1
06	1	7	06	02400	6	39	42	081	09	310	45	2	13	4	3	6	9	7	6	5	1	6	3	1
07	0	8	01	00900	6	55	56	111	03	360	44	1	16	6	2	6	4	7	6	3	2	9	9	9
09	0	5	10	00100	7	33	30	063	12	240	24	1	10	2	2	7	4	3	9	9	9	6	4	1
10	0	9	02	00300	4	59	47	106	12	290	57	2	12	4	4	4	3	5	5	2	2	5	3	2
11	0	6	03	00100	7	42	33	075	07	250	29	1	14	3	3	7	3	3	5	2	2	6	4	1
12	0	8	01	00000	6	60	54	114	06	380	37	1	12	6	2	6	3	4	6	3	2	7	4	1
13	0	7	04	00003	5	32	34	066	16	310	32	1	12	5	2	5	6	7	5	4	1	5	4	1
15	1	8	01	00000	6	60	59	119	02	370	47	2	12	4	3	7	5	6	4	2	2	2	3	2
16	1	7	01	00007	6	38	44	082	08	390	35	2	15	7	2	6	4	7	6	2	1	6	4	1
17	1	4	02	00007	7	26	51	077	08	280	22	2	12	3	2	7	5	6	7	2	1	7	5	1
18	0	6	04	00050	7	44	37	081	10	400	26	1	11	5	2	6	5	7	7	4	1	7	5	1
19	0	5	02	00200	7	41	57	098	04	380	21	2	11	3	1	6	6	6	7	4	2	7	5	2
20	1	8	02	00600	7	60	59	119	00	440	45	1	12	2	2	7	3	3	7	4	1	6	4	1
21	1	6	02	00300	5	41	44	085	11	270	23	2	12	4	1	6	5	6	6	5	2	6	6	1
22	0	5	02	00200	7	36	26	062	16	330	24	2	12	4	2	7	5	6	7	6	1	6	6	1
23	0	7	02	00400	6	26	43	069	09	290	34	2	12	3	1	6	4	2	9	9	9	9	9	9
24	0	8	03	01100	7	60	53	113	02	380	36	1	13	6	2	5	3	6	7	2	2	6	3	1
25	1	9	04	06000	7	29	38	067	09	330	60	1	12	5	3	7	2	1	7	2	1	7	7	1
26	1	6	02	00025	6	34	46	080	09	310	28	2	13	3	3	6	6	7	6	5	1	6	4	1
27	1	7	02	00003	5	40	56	096	07	330	39	2	13	7	2	6	6	7	6	4	1	6	3	1
28	0	9	03	00030	5	44	48	092	06	390	62	1	14	4	3	6	6	1	7	6	5	6	6	1
29	0	5	07	00900	5	59	47	106	06	340	25	1	13	3	1	7	5	7	5	5	1	5	4	1
31	0	8	01	00013	6	43	40	083	02	380	40	1	14	5	2	6	6	4	6	4	1	6	4	1
32	0	8	03	00050	6	17	40	057	03	390	40	2	14	4	2	6	7	6	6	4	1	7	6	1
34	1	9	06	00600	7	48	46	094	04	380	55	2	12	2	3	7	6	7	7	5	1	6	5	1
35	0	8	05	10800	6	22	49	071	14	340	50	2	14	3	3	7	6	7	5	2	1	6	2	1
36	0	8	03	00075	4	51	45	096	02	330	40	2	13	4	2	5	4	6	5	3	1	5	2	1
38	1	7	02	00003	2	00	00	000	09	290	32	2	12	5	6	9	9	9	5	5	4	4	3	3
39	0	7	03	00300	7	38	49	087	06	320	36	1	17	5	2	5	7	7	4	3	1	5	5	1
40	1	8	01	00003	5	36	51	087	15	230	41	2	14	1	3	7	4	1	7	5	1	7	5	1
41	1	8	01	00100	7	39	60	099	03	340	43	2	12	4	2	7	4	5	7	5	1	7	6	1
42	0	7	01	00010	4	50	47	097	17	300	33	1	12	5	2	4	6	5	4	4	3	5	6	2
44	0	6	06	00075	7	50	46	096	10	370	27	1	15	3	1	5	5	7	6	5	1	6	5	1
46	0	8	04	00200	3	39	38	077	07	260	39	2	99	4	3	6	2	3	5	2	1	5	2	1
47	1	5	01	00003	7	60	49	109	10	430	27	2	14	4	1	6	7	1	7	2	1	7	6	1
52	0	9	02	01200	6	43	50	093	01	400	46	1	16	6	2	9	9	9	7	3	1	7	4	1
53	1	6	03	03000	6	51	47	098	08	320	44	2	14	6	2	9	9	9	7	6	1	7	5	1
54	0	8	04	01800	6	33	39	072	14	360	38	1	12	5	2	9	9	9	9	9	9	9	9	9
55	1	7	04	00075	6	30	44	074	08	390	37	2	16	7	2	5	4	6	6	4	1	6	4	1
56	0	5	06	00075	5	39	36	075	10	280	24	2	17	5	2	6	6	7	6	6	1	7	5	1

A	Day 4 a	Day 4 b	Day 4 c	Day 5 a	Day 5 b	Day 5 c	Day 9 a	Day 9 b	Day 9 c	R	S	T	U	V	W	X
01	9	9	9	9	9	9	9	9	9	0	7	000	000	1	1	0
02	6	4	2	6	5	1	6	4	3	1	4	000	100	5	2	0
03	9	9	9	7	6	1	7	7	1	1	1	025	500	6	3	1
04	6	4	2	6	4	1	9	9	9	1	4	000	100	7	1	0
05	7	4	1	6	5	1	6	6	2	1	1	800	800	7	2	1
06	1	2	1	6	6	1	9	9	1	0	4	000	300	7	2	0
07	7	4	1	6	4	1	9	9	9	0	4	000	000	4	3	0
09	9	9	9	9	9	9	9	9	9	0	3	000	000	4	1	0
10	6	3	1	1	4	1	1	2	7	0	5	000	000	5	1	0
11	7	6	1	7	6	1	7	7	1	1	4	000	300	0	1	0
12	7	5	1	6	5	2	7	6	1	1	1	800	800	7	3	1
13	6	5	1	6	6	1	7	6	1	1	1	800	800	7	2	1
15	1	2	1	1	2	1	3	1	4	0	6	000	000	1	3	0
16	5	3	1	6	5	1	6	5	2	1	5	000	100	7	3	0
17	7	5	1	7	6	1	7	7	1	1	1	800	800	7	1	1
18	7	4	1	7	5	1	7	6	1	1	1	800	800	7	3	1
19	7	6	2	7	6	1	4	6	2	0	3	000	000	7	3	0
20	7	3	1	7	5	1	7	6	1	1	3	000	300	4	3	0
21	7	7	1	7	7	1	7	7	1	1	4	000	400	4	1	0
22	7	2	1	7	6	1	7	6	1	1	4	000	600	4	2	0
23	9	9	9	9	9	9	9	9	9	0	6	000	000	3	1	0
24	7	4	1	7	3	1	7	5	1	1	1	025	200	6	3	1
25	7	7	1	7	7	1	7	7	1	0	6	000	000	1	2	0
26	7	5	1	6	4	1	7	6	1	1	4	000	075	2	2	0
27	7	6	1	9	6	1	6	6	1	1	3	000	400	6	2	0
28	6	5	1	6	5	1	6	6	1	0	4	000	000	5	3	0
29	6	6	1	6	5	1	7	7	1	1	1	300	034	7	2	1
31	4	4	1	4	4	1	4	3	1	1	1	800	800	6	3	1
32	7	7	1	7	7	1	7	7	1	1	1	800	800	7	3	1
34	6	5	1	5	3	1	6	6	1	1	6	000	025	3	3	0
35	6	1	2	6	5	1	7	5	2	0	5	000	000	4	2	0
36	5	4	1	5	4	1	6	6	2	1	3	000	075	4	2	0
38	9	9	9	9	9	9	9	9	9	0	4	000	000	4	1	0
39	5	5	1	5	6	1	5	6	1	1	4	000	050	4	2	0
40	7	6	1	7	6	1	7	7	1	0	6	000	300	4	1	0
41	7	6	1	7	6	1	9	9	9	1	1	800	800	7	2	1
42	9	9	9	9	9	9	9	9	9	0	8	999	999	0	2	0
44	7	6	1	7	6	1	7	6	1	1	1	800	800	7	3	1
46	6	4	1	6	6	1	7	6	1	1	3	000	999	7	1	0
47	7	6	1	7	6	1	9	9	9	1	1	800	800	7	3	1
52	7	5	1	7	6	1	7	7	1	1	1	800	800	7	2	1
53	7	7	1	7	7	1	7	7	1	1	1	800	800	7	2	1
54	9	9	9	9	9	9	9	9	9	1	1	800	800	7	3	1
55	6	4	1	6	4	1	6	6	1	1	1	800	800	7	3	1
56	6	5	1	6	6	1	6	6	1	3	8	995	999	0	1	0