

To the Graduate Council:

I am submitting herewith a dissertation written by Carol A. Moore entitled "A Validity Assessment of A Self-Report Scale of Self-Management Practices." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

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A VALIDITY ASSESSMENT OF A SELF-REPORT
SCALE OF SELF-MANAGEMENT PRACTICES

A Dissertation
Presented for the Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Carol A. Moore

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DEDICATION

This dissertation is dedicated to the children I love in the hope that something I do in my life will make a positive difference in theirs. Perhaps they will set their goals far beyond the horizons I see and make the world a better place because they were here.

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My thanks go to Dr. Bob Williams for his devotion to excellence and the immeasurable effort he put forth to make this a useful and acceptable document. His guidance has kept me focused on the project and moving forward despite the innumerable impediments which gnawed at my progress without respite.

I remember a walk down Noah Street with my uncle Ed one winter night when I was fifteen years old. He was the the first to encourage me to "...go as far as you can and make as much difference as possible in the world while you're here." I am still trying to do that.

My mother, Lois Moore, has kept my life organized and flowing throughout this process. Especially at the end of it, her help and support kept things together so that I could devote my attention and energies to this dissertation.

And finally, I wish to express my gratitude to Dennis Freeman for his enduring friendship. His counsel and patience have made a difference in my life. He is a friend in the true sense of the word.

ABSTRACT

Results from administration of Life Style Approaches (LSA), a self-report scale of self-management processes, were used in assessing the psychometric features of the instrument. Factors of the LSA were correlated with a number of variables presumed to have varying degrees of conceptual linkage with self-management: locus of control, self-efficacy, health behaviors, and religious beliefs and practices. Seven hundred and thirty-five college students and adults were administered the LSA and comparison inventories.

The original 48-item scale was reduced to 22 items that yielded an internal consistency value of .80 (Cronbach's alpha). The six identified factors were Performance Focus and Efficiency, Goal Directedness, Timeliness of Task Accomplishment, Organization of Physical Space, Written Plans for Change, and Verbal Support for Self-Management. Significant relationships were demonstrated (at the .0001 level) between self-management approaches and locus of control ($r = -.32$), general self-efficacy ($r = .69$), social self-efficacy ($r = .40$), and health behaviors ($r = .32$). Individuals who scored high on the first four of the six LSA factors were more likely to demonstrate good health habits than those who did not. Self-reported religious beliefs and practices were unrelated to total LSA scores.

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CHAPTER I

INTRODUCTION

Beginning in the mid 1960s, various individuals in the field of applied behavior analysis began to explore the self-application of behavior modification procedures. Some of the standard approaches such as monitoring overt behavior, changing setting conditions, and applying contingent rewards began to be used on a self-directed or self-applied basis. Also, researchers began to combine cognitive strategies such as self-talk with traditional behavioral strategies in the promotion of self-change. Individuals typically used these cognitive-behavioral techniques in changing specific target behaviors such as smoking, eating, exercising, and studying. The impact of self-management strategies on these behaviors was usually evaluated over a period of several weeks.

While the self-management techniques identified above are undoubtedly effective in changing discrete target behaviors over the short run, their long-term efficacy in the natural environment has not been adequately clarified. For example, little research has addressed the issue of how extensively self-management

procedures are normally used in people's daily lives. The impact of the use of such procedures in natural settings on overall quality of life is even less clearly defined.

Statement of the Problem

Self-management is a set of techniques for directing one's efforts to accomplish certain goals. It encompasses both cognitive and behavioral strategies that are applied on a self-directed basis. Self-management often includes the use of both external and internal support, but the application of that support is initiated and orchestrated by the individual self-manager.

Empirically developed self-management instruments are few. The Self Control Scale (SCS) (Rosenbaum, 1980) has been the most widely used instrument for assessing self-management. The SCS measures the extent to which adults employ self-control strategies primarily of a cognitive nature (e.g., use of self-statements, application of problem solving procedures, and perceived self-efficacy). Rosenbaum reported substantial test-retest reliability and internal consistency coefficients for the SCS.

Rude (1986) developed the Cognitive Self-Management test to tap perceptions of self-efficacy in approaching new tasks and style of self-talk (supportive vs. disparaging). Her brief description (i.e., 26 thoughts and behaviors rated on a 5-point Likert scale) does not include statistical analysis of the instrument. It was used in a combined form with the SCS and the Self-Control Concepts Test (Rehm, Fuchs, Roth, Kornblith, & Romano, 1979) to assess cognitive self-control. The combined z scores of the three scales yielded cognitive self-control skill score means that increased from 1st test to 2nd test to 3rd test for treatment groups receiving different combinations of cognitive self-control skills training and assertion skills training.

Like Rude's instrument, the Concepts Test developed by Rehm and colleagues primarily assesses cognitive components, dealing with attitudes, beliefs, and self-talk. Although there is little psychometric information available on this scale, it appeared to be highly sensitive to therapeutic gains among depressed women who participated in a self-control therapy program.

Brandon, Oescher and Loftin (1990) presented a detailed analysis of a behaviorally based self-report instrument (the Self-Control Questionnaire) assessing the areas of weight control, time management, emotional control, social behavior and financial planning. This instrument has adequate internal consistency and is moderately correlated with the Self-Control subscale of the California Personality Inventory. The Self-Control Questionnaire has also been positively correlated with fitness level.

It is apparent that the existing self-management instruments have generally placed greater emphasis on cognitive than behavioral strategies. However, establishing the validity of instruments designed to measure cognitive self-control is difficult because the responses are covert and their use can only be inferred from self-report. Nonetheless, there remains a need for a self-report instrument that can address the extent to which one uses both behavioral and cognitive self-management techniques.

Purpose of the Study

The purpose of this study was to evaluate the psychometric properties of a comprehensive self-report scale of self-management processes, Life Style

Approaches (LSA), which includes an array of cognitive and behavioral strategies drawn from an integrated model of self-change (Williams & Long, 1991). The many cognitive and behavioral strategies incorporated in the Williams-Long model evolved from the self-management research literature spanning the last twenty years. This study was part of an initial attempt to determine how extensively individuals actually used the various self-management techniques recommended in a major self-help text and how they were linked to physical and psychological health indicators.

There were three objectives in the study:

(1) assess the concurrent and discriminant validities of the identified clusters of the LSA (i.e., the extent that these clusters correlated to variables with which they were assumed to have different levels of conceptual linkage); (2) assess the extent to which individuals reported the use of specific self-management strategies such as completing tasks in a timely fashion and focusing on the work at hand; (3) determine the relationship between self-reported use of specific self-management procedures and overall measures of self-management and health habits.

Research Issues

If a person uses many of the self-management procedures described in the LSA, what other lifestyle characteristics does that person manifest? As suggested by research on Rosenbaum's Self Control Scale, one might predict that the LSA scores would be related to an internal locus of control. If so, application of the self-management strategies in the LSA would relate to a sense of personal control over one's life. The instrument used to assess this sense of control orientation is the I-E Scale (Rotter, 1966).

If the use of self-management procedures leads to desirable behavior change, then LSA clusters would be expected to correlate with a sense of self-efficacy (i.e., the belief that one is able to do those things leading to positive outcomes in one's life). The measure of self-efficacy used in this study is the Self-Efficacy Scale (Sherer et al., 1982). The General Self-Efficacy (GSE) subscale is the part of the Self-Efficacy Scale projected to be most closely aligned with the LSA clusters.

If good habits are predicated on effective self-management, then the use of self-management strategies should also be related to good health habits. Thus,

scores on the LSA clusters should correlate with scores on the Health Habits Scale used in this study (Williams, Thomas, Young, Jozwiak & Hector, 1991).

Because self-management applications likely have a pervasive impact on one's life, it is difficult to identify psychometric measures that should not be related to the LSA clusters. However, the Social Self-Efficacy (SSE) subscale of the Self-Efficacy Scale is less clearly linked to personal management than the General Self-Efficacy subscale of the same instrument. Consequently, correlations between the LSA and SSE subscale are predicted to be considerably lower than correlations between the LSA and GSE subscale. Religious beliefs and practices represent another area that does not appear to be a natural parallel of effective self-management. Therefore, a strong relationship is not expected between the LSA and the Religious Survey included as part of the test battery.

If self-management is a salient model for analyzing success in important areas of life, what specific self-management practices are most frequently used? Which of these practices appear to contribute the most to important life dimensions? Item analysis

of the LSA should reveal which individual self-management practices are most frequently employed and which are most closely related to overall self-management scores.

Implications of this Study

Health care has evolved from a curative to a promotive emphasis during this century. Newer models of health behavior are not necessarily based in disease referents (Williams et al., 1991). More and more, people are expected to assume responsibility for the quality of their own well-being. Physicians and health care providers are beginning to utilize the power of individuals to impact their own health by confronting problems of lifestyle rather than discrete physical or psychological disease. The tendency is away from the dependency model in which patients are "...responsible only for seeking care, reporting symptoms, and following professional advice" (Starker, 1988, p. 146). The independent, proactive patient is gaining a more prominent role in health care today.

The importance of knowing what people do to affect their quality of life should not be minimized. The validation of this self-management instrument, Life Style Approaches (LSA), is an important step toward

knowing what self-management practices are most conducive to better quality of life. Finding the practices that are most predictive of good physical and psychological health may begin to direct us to effective methods for improving health outcomes.

CHAPTER II

REVIEW OF THE LITERATURE

The literature on self-management and self-management scales, locus of control, self-efficacy, health habits, and religious beliefs and practices will be examined for conceptual and empirical support for this investigation. Established relationships between these concepts will be presented in developing the rationale for the validation of the LSA.

Self-Management

Self-management is not simply changing or controlling behavior. Behavior change/modification techniques are specific and constrained in practice. They are limited to applications in identified, defined activities. Their effectiveness is measured in altered outcomes. Self-management is a broader-based concept that extends beyond discrete techniques encapsulated in setting events and reinforcement contingencies. Self-management is a set of skills that is generally applicable to life circumstances.

The Williams and Long (1991) model of self-management used in this study takes into consideration the impact of environmental factors and the influence

of others on successful self-management. In the Williams-Long model, self-management is presumed to reflect the self-directed use of both external and internal cues in systematically controlling behavior in a variety of experiences and opportunities. Self-management, as conceptualized in this study, may be thought of as overall life organization (e.g., developing goals, identifying strategies to reach those goals, and following through with one's plans).

Self-management is not limited to any particular developmental stage, but rather is a set of procedures that may be applied at any age in order to enhance life situations and expand the repertoire of personal skills. Self-management can improve our control over some aspects of our lives by using specific techniques to direct our efforts. Self-management is an approach to thinking, doing and responding to our environment. It is a monitoring technique that guides us to our next behavioral step. The concept of self-management is not new, but much of the research related to it is less than a decade old. Several significant research efforts have emerged since 1980.

Assessment Tools

Rosenbaum (1980) designed the SCS as a self-report instrument to measure people's tendencies to use self-control techniques to solve behavioral problems. It measures adults' self-controlling responses to anxiety, thought cues, and pain cues. The final version describes (a) use of cognitions and self-statements to control emotional and physiological responses, (b) application of problem solving strategies, (c) ability to delay gratification, and (d) perceived self-efficacy. SCS strategies were drawn from types of self-controlling behaviors described in earlier literature on the nature of stress-handling methods and various coping-skills therapies.

Rosenbaum's study found that Israeli and American females scored higher on self-control than their male counterparts on both Hebrew and English versions of the scale. Gender differences in self-control in adults and children are supported by other studies (Humphrey, 1982; Kendall & Wilcox, 1979; Redden, Tucker, & Young, 1983; Robin, 1984; Williams, Jozwiak, & Hector, 1985).

Redden and colleagues' (1983) further study of the SCS discerned a redistribution of Rosenbaum's 1980 variance between factors for males and females. Only

three male and eight female loadings were in the very good range (.63 or higher). Their analysis suggested lack of a clear, strong factor structure and one which accounted for only 31% of the variance. Further work was recommended to develop scale items forming meaningful constructs that account for more substantial portions of the variance.

Brandon et al.'s (1990) assessment instrument was developed to explore the relationship of the self-control construct to health status and practices. The Self-Control Questionnaire's (SCQ) five factor structure yielded an internal consistency alpha of .80, a significant correlation ($r=.419$, $p<.05$) between self-control scores and objectively measured fitness, and a significant difference in SCQ scores for a group of cyclists (higher scores) and upper division/graduate students (lower scores). The SCS and SCQ are significant early steps in formal self-management measurement.

Self-Management Texts

Innumerable "popular" and psychometrically unfounded, non-empirical self-management books are presently on the market. The specific techniques espoused in these texts have not been rigorously tested

and may actually confound the whole self-management picture. Starker (1988) found that most psychologists in his study were willing to recommend these books to their patients, even though quality control of such texts was not well-established. Considering the broad range of skills of non-professional consumers using these books, Starker concludes that reputable researchers are wary of the validity of self-applied improvement strategies. Rosen (1981) preceded Starker with concern about the declining quality of do-it-yourself treatment manuals. At that same time, Glasgow, Schafer, and O'Neill (1981) suggested that the few "popular" texts that did reflect sound self-management approaches may require more supervision to apply than would be normally expected in the usual self-help settings.

Along with validity questions about self-help programs and specific techniques, there are questions about whether there is a sense of personal power required for successful self-management, and whether specific self-management techniques are related to personal characteristics. For example, Hunt and Bepalec's review (1974) of methods for modifying smoking behavior suggests the possibility that

treatment choice may be secondary to individual characteristics. In other words, the vehicle for change (self-management techniques) may be driven by personal traits such as motivation to change. Two of the more powerful personal traits relevant to self-management discussed in the literature are locus of control and self-efficacy.

Locus of Control

Decades of research, including over 4700 citations and nearly a dozen texts (Strickland, 1989), have followed Rotter's (1966) conceptualization of generalized expectancy of control of reinforcement (locus of control--LOC). Rotter (1966) asserted that people holding internal expectancies perceive contingencies between their own behavior and subsequent events, whereas individuals with an external orientation are more likely to construe events as resulting from luck, chance, fate, or powers beyond their personal control. Every time a behavior is followed by the anticipated outcome, expectancy that reinforcement is related to that behavior increases. A series of reinforcements unrelated to individual effort creates the expectancy that reinforcements are

independent of personal behavior and dependent on another source (Lowery, 1981).

Since Rotter's (1966) landmark monograph, the LOC concept has predicted many different dependent variables. It is one of the most studied variables in the social sciences, ranging from political science to public health (Rotter, 1990). With respect to self-management, researchers have shown that people who are internally oriented are more responsive to self-management instruction, more likely to use specific self-change techniques, more likely to sustain improvements over time, more independent and resistant to influence, and higher in self-control than are externally oriented individuals (Best & Steffy, 1975; Kennedy, Gilbert, & Thoreson, 1978; Rosenbaum, 1980; Rosenbaum & Argon, 1979; Strickland, 1989; Tiffany, 1967). Shortly after Rosenbaum (1980) linked high self-control to internal LOC, Sherer et al. (1982) found a relationship between internal LOC and high self-efficacy.

Self-Efficacy

The relationships between self-management and locus of control and between locus of control and self-efficacy suggests the possibility of a direct

relationship between self-management and self-efficacy. Self-efficacy is a basic component of the ability to perform new behaviors in familiar settings or established behaviors in novel settings. Bandura (1977) calls it the single most powerful determinant of behavioral change because it dictates whether one decides to perform a behavior, how much effort will be spent, and how long one will persist in order to succeed. Self-efficacy transcends situations. The more successful experiences one has in more different endeavors, the more one will generalize efficacy expectancies to other situations (Bandura, 1977). McCombs' (1986) rather lengthy discussion of the self-system includes more than a dozen studies suggesting that the most important self-system process is self-regulation, especially as it relates to personal control and self-efficacy.

In specific self-management attempts to modify discrete behaviors, subjects high in self-efficacy participated more actively in structured programs, predicted their own success or failure in treatment, predicted their own relapse following treatment, resisted relapse longer following treatment, succeeded more often in structured weight loss programs,

maintained abstinence from alcohol after treatment for alcoholism, and followed prescribed exercise regimens better than subjects low in self-efficacy (Best & Steffy, 1975; Chambliss & Murray, 1979; Condiotte & Lichtenstein, 1981; DiClemente, 1981; Edell, Edington, Herd, O'Brien, & Witkin, 1987; Ewart, Taylor, Reese, & Debusk, 1984; Godding & Glasgow, 1985; Kaplan, Atkins, & Reinsch, 1984; Kennedy et al., 1978; Reynolds, Tobin, Creer, Wigal, & Wagner, 1987; Rist & Watzl, 1983; Yates & Thain, 1985).

Health Habits

Strickland (1978) and Wallston and Wallston (1978) offer thorough reviews of the locus of control and health habits literature. Several of their citations have shown that internally oriented individuals are more likely than those externally oriented to engage in behaviors that facilitate physical well-being. For example, non-smokers tend to be more internal than smokers; sexually active "internals" are more likely to take contraceptive steps than are sexually active "externals"; in weight control non-treatment groups, externally oriented subjects weighed more initially but lost less weight than internally oriented subjects; internal subjects reported greater seat belt use and

preventive dental care than external subjects; and sick internals demanded more information about their condition than did sick externals.

In contrasting internals with externals, Strickland (1978) hypothesized that internals would be more sensitive to health messages, would increase their knowledge about health conditions, would attempt to improve physical functioning, and may, therefore, be less susceptible to dysfunction. Overall, the findings indicated that when people are faced with health issues, internal individuals appear to engage in more adaptive responses than do externals. Research with the LOC dimension suggests that control orientation influences health to some extent, but Strickland (1978) cautions that LOC is only one of a number of complex variables contributing to predictions of health behavior.

Strecher, DeVellis, Becker, and Rosenstock (1986) have examined the literature on the role of self-efficacy in health behavior. The importance of self-efficacy, a construct which they consider situationally specific, is shown in several studies where self-efficacy expectations predicted success: self-efficacy was predictive of success in smoking cessation studies;

high self-efficacy subjects in two weight loss studies achieved greater success in treatment than low self-efficacy subjects; self-efficacy predicted participation in family planning activities and contraceptive use; self-efficacy predicted successful alcohol abstinence following treatment for alcohol abuse; and self-efficacy scores predicted exercise regimen maintenance after discharge from rehabilitation for post myocardial infarction (MI) and chronic obstructive pulmonary disease (COPD) patients.

It is widely accepted that environmental, behavioral, and inherited biological conditions are predominant influences on one's health. The fact that none of these conditions can occur exclusive of the others complicates personal health management. The synergy of these factors debilitates and kills more frequently than any one of them in isolation. Their combined power is more potent than the sum of the parts. The separate potentials to affect health interact, reinforce, and even multiply each other.

Despite the interaction between genetic endowment and personal lifestyle, numerous sources suggest that the power of lifestyle alone may be enormous (Belloc & Breslow, 1972; Breslow, 1979; Public Health Health

Service, 1979, 1991; Wiley & Camacho, 1980). According to the Surgeon General's Report in 1979, as much as 50% of U.S. mortality was probably lifestyle based. In comparison, environmental and genetic conditions were each attributed only 20% of the responsibility for mortality (Public Health Service, 1979). The numbers have not improved dramatically over the past dozen years. "If tobacco use stopped entirely today, an estimated 390,000 fewer Americans would die before their time each year. If all Americans reduced their consumption of foods high in fat to well below current levels and engaged in physical activity..., additional results of a similar magnitude could be expected. If alcohol were never carelessly used..., about 100,000 fewer people would die from unnecessary illness and injury" (Public Health Service, 1991, p.1). Loss of life from these lifestyle-based causes comprised a large portion of the 2.1 million American deaths per year during the 1980s. Impaired functioning from these same causes is quite possibly incalculable.

Although one may not be able to alter some larger determinants of lifestyle such as socioeconomic status, educational achievement, and ethnic background, behavioral components can be targeted effectively.

An individual can practice preventive health and health promotion by focusing on discrete activities such as smoking, alcohol consumption, nutrition, exercise, immunizations, and regular physical exams.

Consequently, an individual has the ability to affect his or her own health by selecting behavioral alternatives conducive to well-being. One's personal health behavior should be subject to the same behavior management tenets as are behaviors in other areas of one's life.

In sum, the literature shows that internal orientation (LOC) and self-efficacy are linked to each other and to self-management. Strecher et al. (1986) link self-efficacy to self-management and to health-related behaviors. They contend that the belief that one can change one's own behavior consistently predicts short and long-term success in health-related areas such as cigarette smoking, alcohol abuse, weight control and exercise maintenance. LOC (Best & Steffy, 1975; Chambliss & Murray, 1979; Lau, 1982; Strickland, 1978; Wallston & Wallston, 1978), self-efficacy (Bandura, 1982; Condiotte & Lichtenstein, 1981; Edell, Edington, Herd, O'Brien, & Witkin, 1987; Ewart et al., 1984; Kaplan, Atkins, & Reinsch, 1984; Strecher et al.,

1986; Yates & Thain, 1985), and self-management (Katz & Singh, 1986; Perri, Richards, & Schultheis, 1977; Williams et al., 1991) have been correlated with health-related behaviors such as smoking, eating, exercise and alcohol consumption.

Religious Beliefs and Practices

Similarities between Biblical teachings and behavior modification tenets have been discussed in the literature (Bufford, 1977; Hilts, 1973a, 1973b). However, the citations do not relate personal management to religious beliefs and practices. Religious dogma includes sets of recommended practices juxtaposed to beliefs one should hold. Although these practices and beliefs may coexist, there is no research suggesting they are related (Allport, 1966; Allport & Ross, 1967; Cline & Richards, 1965;). Strickland and Shaffer's (1971) study suggests a relationship between Allport's (1966) intrinsic-extrinsic orientation (i.e., a set regarding faith as a supreme value in its own right versus a utilitarian, self-serving, self-protecting set) and a belief in internal or external control of reinforcement (LOC). But that investigation of belief systems does not show

a correlation between faith itself and Rotter's (1966) LOC concept.

It has been argued that how intensely individuals believe and why they believe as they do should affect religious behavior and well-being more than what they believe (Maloney, 1985). Nonetheless, Batson's (1976) and Rokeach's (1960) research found no relationship between individuals' personal intentions and motives and their religious actions. Robertson's unpublished dissertation (1989) indicates that, at best, religious variables are inconsistently linked to mental health variables. Because of these inconsistent relationships, there is no apparent reason why either religious beliefs or practices should be conceptually linked to self-management. Therefore, religious beliefs and practices were included in the current study to assess the discriminant validity of the LSA.

Overall Objectives

This investigation assessed the validity of a new instrument for measuring the effectiveness of specific self-management techniques. Self-control has been shown to relate to locus of control, self-efficacy and health behaviors. Therefore, the new instrument, Life Style Approaches (LSA), was predicted to be correlated

with the I-E Scale, the Self-Efficacy Scale, and the Health Habits Scale. Because locus of control, self-efficacy and health habits have not been consistently linked to religious beliefs and practices, no relationship was predicted between self-management and religious beliefs and practices.

CHAPTER III

RESEARCH METHODOLOGY

The database tapped in this study was created by a faculty-supervised research team of University of Tennessee graduate students. Approximately 900 sets of responses to an array of self-report surveys comprise the data pool from which several research studies are being conducted. This study is one of those investigations.

Subjects

Participants in the study were drawn from three different college settings and three non-student populations. The majority of the respondents came from a large state university (n=399) and a community college (n=240). A lesser number of student participants came from a small church-affiliated college (n=59). Fifty-four non-student employed adults were recruited from a mental health center staff and a nuclear power facility; eleven senior members of a fundamentalist religious group also volunteered. Demographic features of the usable population (N=735) are included in Table 1.

Table 1. Sample Demographics

Category	N	Category	N
<u>School/agency</u>		<u>Age</u>	
Univ. of Tenn.	399	18-24	474
Pellissippi St.	240	25-34	160
other	96	35-49	87
		50-64	11
		65+	3
<u>Gender</u>			
male	216		
female	518		
<u>Race</u>		<u>Employed</u>	
black	38	1-10 hrs/wk	73
white	685	11-20 hrs/wk	135
other	10	21-30 hrs/wk	100
		31+ hrs/wk	153
<u>Student status</u>		<u>Marital status</u>	
full time	581	married	197
part time	111	sep/divorced	70
not attending	43	never married	465
<u>Contact w/close friends</u>		<u>Living arrangements</u>	
daily	368	alone	95
weekly	253	w/children	30
monthly	69	w/spouse	101
yearly	25	w/parents or	
almost never	19	relatives	183
		w/roommate	178
<u>Highest educational attainment</u>			
< high school	14	BA/BS	94
H.S./G.E.D.	550	MA/MS/PhD	30
tech/voc school	46		

Test Battery

The overall test battery included 400 items embedded in 16 self-report instruments. The battery took approximately 1 and 1/2 to 2 hours to complete. The following inventories in the test battery were included in the current study:

<u>Position in Battery</u>	<u>Inventory</u>	<u># of items</u>
2	I-E Scale	29
4	Demographic Survey	11
10	Health Habits Scale	11
12	Life Style Approaches	48
13	Self-Efficacy Scale	30
16	Religious Survey	9

A complete list of all inventories in the battery is included in Appendix A.

Procedure

General written instructions were presented at the beginning of the packet of inventories, informed consent forms, and answer sheets. Because instructions to each questionnaire varied, more specific directions preceded each instrument. However, all responses were entered in pencil on two printed answer sheets (front and back) designed for electronic scoring. Subjects

were encouraged to take breaks whenever they felt a need. No time limits were applied and no special security measures taken other than guarding the identities of respondents and the confidential nature of their scores.

Data collection was conducted by a research team of doctoral students from the Educational and Counseling Psychology Department at the University of Tennessee at Knoxville. Team members generally chose to request the participation of groups with whom they had some structured relationship (e.g., undergraduate classes, church groups, employee groups). All participants were given feedback on their performance and some students were given extra credit toward coursework for their cooperation. Most respondents completed the battery on a take-home basis. Most packets were not completed in a single session. Packets were returned to a pre-arranged point (e.g., a classroom, an office mailbox) and added to a computer database within a few days.

Data entry was accomplished through an electronic optical scanning method. Data were cleaned through an item-by-item visual inspection of printed output. A handful of obvious response sets were deleted and

grossly incomplete batteries were omitted from the subject pool. Corrections were made by graduate student members of the same research group. Inventory scoring was planned and conducted by the research group. Score report sheets were used by data collectors to fill out feedback sheets that were distributed to participants.

Psychometric Properties of Instruments in this Study

Rotter's (1966) I-E Scale of control orientation is a 29 item (including six filler items) forced-choice measure of an individual's tendency to regard reinforcement as internally or externally controlled. The range of possible scores on the I-E Scale is 0 to 23 and it is scored in the direction of externality. The higher the score the greater the externality of the subject. Rotter (1966) reported test-retest reliability to be .72 for both genders over one month (group administered) and .55 for mixed individual and group administrations over two months for both genders. Rotter pointed out that the items were not arranged in a difficulty hierarchy and were designed to measure attitudes in diverse situations. Inasmuch as Rotter (1966, 1990) claims high internal consistency is not necessary under these circumstances, he accepts alphas

in the range of .65 to .79. With respect to comparison variables, the I-E Scale tends to be negligibly related to measures of intelligence (-.22 to .03), negatively correlated with the Marlowe-Crowne Social Desirability Scale (-.12 to -.41), negatively correlated with health behaviors and sick-role behaviors (Wallston & Wallston, 1978), and positively correlated with religious orientation ($r=.30$, Strickland & Shaffer, 1971), extrinsically religious individuals professed expectancy of external control of reinforcement. The I-E Scale has also been correlated (.44) with the adult Nowicki-Strickland I-E Locus of Control Scale (Cellini & Kantorowski, 1982). Both scales are scored in the direction of externality.

The mean and standard deviation on the I-E Scale increased for males between Rotter's 1966 and Cellini and Kantorowski's (1982) investigations. For females the mean increased even more but the standard deviation decreased. However, Strickland (1989, p. 3) notes that "As times changed ... mean scores have varied" A copy of the instrument may be found in Appendix B.

The Self-Efficacy Scale (Sherer et al., 1982) includes beliefs about one's own abilities in general situations and in specific social situations. The two

subscales are General Self-Efficacy (17 items) and Social Self-Efficacy (6 items). The General Self-Efficacy (GSE) subscale accounts for 26.5% of the total instrument variance and the Social Self-Efficacy (SSE) subscale accounts for 8.5% of total instrument variance. Cronbach's alpha is .86 for the GSE and .71 for the SSE. The GSE subscale correlates positively with educational level and military rank (past achievements) and the SSE correlates negatively with number of jobs quit and number of times fired. Because the GSE measures belief in one's potential to perform effectively, it was reasonable to find moderate to high negative correlations between the GSE and Rotter's external control orientation (LOC). Additional correlations with a Personal Control and Self Esteem variable and with Interpersonal Competency speak for the concurrent validity of this instrument. A copy of the instrument is included in Appendix C.

The Health Habits Scale (HHS) was derived from a larger study of self-management behaviors (Williams et al., 1991). It measures health habits that have been shown to relate directly or indirectly to health status. The HHS consists of eleven items (five addressing effective living, five addressing

ineffective living, and one filler item) measuring behaviors reflective of both disease prevention and health promotion models of health care. Possible scores range from +20 to -20. Test-retest reliability was .85 at 2 to 3 weeks and .75 at a 2 year follow-up. Cronbach's alpha was low to moderate (.48 and .40 in separate samples). Pearson's correlation between "self" and "other" reports was .64. Concurrent validity was established with significant correlations with health status = .30, self-efficacy = .32, purpose in life = .31, life satisfaction = .27, optimism = .29, perceived stress = -.31, and propensity toward anger = -.28. A copy of the instrument is included in Appendix D.

The Religious Survey contains 9 items that represent religious beliefs and religious practices. Three items assess frequency of traditional religious practices, and six measure agreement with traditional religious beliefs. These items do not constitute a standardized measure of religiosity. Instead, they are based upon information from other studies that purportedly assessed religious dimensions (Allport & Ross, 1967; Batson, 1976; Gladding, Lewis & Adkins, 1981; Glock & Stark, 1966). Because self-management

does not appear to be conceptually linked to these religious dimensions, it was expected that scores on the new self-management instrument would be unrelated to scores on religious beliefs and practices. The religious items were included primarily to assess the discriminant validity of the self-management instrument. A copy of the instrument is included in Appendix E.

The instrument of focus for this investigation is the Life Style Approaches (LSA) scale (Appendix F). It was a 48 item instrument that took approximately fifteen minutes to complete. Participants were instructed to indicate how similar each item was to their personal lifestyle by choosing from the following options:

- (A) very different from me
- (B) somewhat different from me
- (C) uncertain
- (D) somewhat similar to me
- (E) very similar to me

These response alternatives were scored on a 0-4 scale, with 0 representing the alternative least consistent with the application of each self-management practice and 4 the alternative most consistent with

that practice. Negatively-worded items were scored in a reverse direction from the positively-worded items. For example on Item 2, "When confronted with many different things to do, I have difficulty deciding what is most important to do," an (A) response (very different from me) receives a score of 4 because decisiveness is a positive self-management attribute. In contrast, an (E) response (very similar to me) receives a score of 0 because it indicates indecisiveness with respect to judging immediate priorities.

Dr. Robert L. Williams formulated the preliminary items of the new self-management instrument, Life Style Approaches, directly from self-management procedures subsumed in the Williams-Long self-management model (1991). Approximately half of these items were worded to reflect effective self-management strategies (e.g., "I have written down my life goals," "I make a list of things I want to do each day"). Others were worded counter to effective self-management (e.g., "I seldom write down my yearly goals," "What I do each day is unrelated to my long-term goals").

Factor Analysis

Stages of Analysis

Dr. Tim Pettibone, former Director of the Bureau of Educational Research and Services at UT Knoxville, in collaboration with Dr. Williams, conducted a 3-stage factor analysis of the original 48-items in the self-management instrument. The first step was a principal components factor analysis with varimax rotation. Each of the resultant six factors (which were unnamed) had at least three items loading at .50 or greater. No item met the .50 criterion on more than one factor. Twenty-three items survived this first stage analysis.

A second principal components factor analysis with varimax rotation for the 23 remaining items yielded a similar pattern of factor loadings on the six original factors, which remained unnamed. The difference was that one item failed to meet the .50 factor loading criterion and was excluded from further analysis.

The third stage of analysis yielded a factor pattern consistent with second stage results. The refined Life Style Approaches (LSA) scale has 22 items loading on six factors with each having at least three items loading at .50 or higher on only one factor. A copy of the 22-item LSA and complete scoring

instructions are included in Appendix G. Factor loadings and the percent of variance accounted for by each factor in the LSA are shown in Table 2.

Factor Descriptions

The factors were named by Dr. Williams based on the content of the specific items comprising each factor. Factor 1, Performance Focus and Efficiency, assesses self-reported skill in prioritizing tasks and concentrating on them until completed. Factor 2, Goal Directedness, measures the perceived clarity with which one views personal goals and objectives. Factor 3, Timeliness of Task Accomplishment, indicates whether one begins a task promptly and works efficiently until it is finished. Factor 4, Organization of Physical Space, measures whether one keeps work and living areas attractive and well organized. Factor 5, Written Plans for Change, measures self-reported written formulation of goals and plans for change. Factor 6, Verbal Support for Self-Management, indicates whether one uses self-talk and seeks support from others when attempting a self-change project.

Table 2. Factor Loadings and Explained Variance for
LSA Factors

<u>Items</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
	(11%)	(10%)	(9%)	(9%)	(8%)	(6%)
2	.62	.09	.09	.23	-.02	-.03
3	.54	.11	.48	.08	.10	-.03
6	.64	.12	.27	.00	.00	-.02
16	.65	.21	-.03	.17	.08	.04
21	.60	.03	.20	-.01	.03	.20
1	-.02	.68	.20	.02	-.10	-.03
11	.12	.74	.14	.10	.14	.00
15	.41	.57	-.09	.09	.06	.06
18	.25	.62	.05	.06	.07	.18
4	.17	.20	.67	.13	.14	-.07
13	.34	.16	.59	.07	.03	.04
17	.01	.18	.54	.10	.03	.29
20	.12	-.14	.67	.19	.15	-.05
10	.15	-.03	.25	.74	.08	.01
19	-.03	.30	.14	.72	.00	.04
22	.27	.02	.07	.80	.06	.05
5	-.10	.09	.15	.10	.56	.15
8	.11	.13	.08	.05	.79	.08
14	.10	-.10	.06	-.01	.79	.03
7	.19	.24	.03	.04	.04	.58
9	.00	-.16	.00	-.05	.18	.59
12	-.02	.07	.02	.08	.03	.72
Eigen Values	2.43	2.12	2.07	1.91	1.72	1.41

Note: Explained variance is indicated in parentheses for each factor. The combined factors accounted for 53% of the variance.

Items comprising the six factors are listed below:

Factor 1. Performance Focus and Efficiency

- (2) When confronted with many different things to do, I have difficulty deciding what is most important to do.
- (3) After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.
- (6) I have difficulty judging how long it will take me to complete a task.
- (16) I have difficulty matching various tasks with my energy level.
- (21) When I deviate from my selected goal, I have a hard time getting back on track.

Factor 2. Goal Directedness

- (1) In most situations, I have a clear sense of what behaviors would be right or wrong for me.
- (11) I have a clear sense of what I most want to experience in my life.
- (15) I'm confused as to the kind of personal qualities I want to develop in my life.
- (18) I have little idea as to what I most want to achieve in my life.

Factor 3. Timeliness of Task Accomplishment

- (4) Once I decide what is most important to do at any given time, I start on that task right away.
- (13) I complete tasks at the time I say I'm going to complete them.
- (17) I sub-divide big tasks into a series of smaller tasks.
- (20) I complete tasks well in advance of deadlines.

Factor 4. Organization of Physical Space

- (10) I keep my work space well-organized.
- (19) I actively work to make the place I spend alot of time more attractive.
- (22) My living space is quite messy.

Factor 5. Written Plans for Change

- (5) I write down the pros and cons of any behavior change I am considering.
- (8) I have written down my life goals.
- (14) I seldom write down my yearly goals.

Factor 6. Verbal Support for Self-Management

- (7) I seldom analyze what I am saying to myself regarding problem areas in my life.
- (9) When I begin a personal change project, I generally keep my plans to myself.
- (12) I seldom ask for feedback from others about

behaviors I need to change and how best to change those behaviors.

CHAPTER IV

RESULTS

Overall, the LSA performed as expected. Some specific self-management strategies emerged as more commonly used than others, the relationships of factors to the total instrument score were quite strong, and the linkage of certain self-management techniques to health behaviors was apparent. Concurrent and discriminant validity expectations of the LSA were supported by the findings. Internal control orientation, self-efficacy, and health behaviors were all related to LSA performance, but religious beliefs and practices were not related to LSA performance. Internal consistency coefficients for each LSA factor ranged from .38 to .71. Cronbach's alpha for the entire LSA was .80.

Relationships Among LSA Factors

Scores on each of the first four LSA factors were highly correlated ($p < .0001$) with the total LSA score and moderately correlated with the other factor scores (Table 3). Performance Focus and Efficiency (1) was strongly related to Goal Directedness (2) and

Table 3. Correlations Among LSA Factors

Factors	2	3	4	5	6	LSA Tot
1 Perf. Focus...	.42	.49	.35	.18	.13 (NS)	.76
2 Goal Dir...		.31	.27	.12 (NS)	.18	.63
3 Timeliness...			.41	.26	.11 (NS)	.73
4 Organiz...				.16	.09 (NS)	.62
5 Written Plans...					.23	.52
6 Verbal Support...						.42

Unless noted NS, all correlations were significant at the .0001 level.

Timeliness of Task Accomplishment (3). Timeliness of Task Accomplishment (3) was strongly related to Organization of Physical Space (4). Written Plans for Change (5) and Verbal Support for Self-Management (6) were weakly correlated with the first four factors and moderately correlated with the LSA total score. Performance Focus and Efficiency and Timeliness of Task Accomplishment were most strongly correlated with the LSA total. Goal Directedness and Organization of Physical Space also correlated strongly but to a lesser degree with the LSA total. Although Written Plans for Change and Verbal Support for Self-Management were significantly correlated with the LSA total, they showed weaker relationships to the total LSA score than did the other four factors. So, identifying the job at hand, establishing one's goals, operating in a timely fashion, and organizing the environment were more strongly related to overall self-management than were writing down one's intentions and mobilizing verbal support for one's initiatives.

Item Analysis

Frequency distributions of item responses are presented in Table 4. Certain self-management strategies were reportedly used much more frequently

Table 4. Frequency Distribution of Responses to Items

Item	Responses				
	0	1	2	3	4
Factor 1	Performance Focus and Efficiency				
2*	45	216	75	265	159
3*	35	192	92	288	152
6*	48	184	89	315	126
16*	23	146	174	279	137
21*	56	266	121	246	74
Factor 2	Goal Directedness				
1	12	27	34	184	506
11	23	59	66	232	380
15*	15	69	76	231	370
18*	35	60	55	216	397
Factor 3	Timeliness of Task Accomplishment				
4	26	128	87	338	183
13	34	134	97	322	176
17	41	134	133	334	121
20	142	255	103	203	58
Factor 4	Organization of Physical Space				
10	57	172	67	251	216
19	36	97	92	308	230
22*	71	147	57	248	240
Factor 5	Written Plans for Change				
5	224	252	129	118	39
8	288	193	54	137	91
14*	260	229	53	132	86
Factor 6	Verbal Support for Self-Management				
7*	37	141	144	262	176
9*	165	324	83	142	48
12*	63	212	96	272	118

* Note: For scoring purposes, response frequencies to negatively worded items were reversed so that 0 represents responses least consistent with good self-management and 4 represents responses most consistent with good self-management.

than others. Fifteen of the twenty-two items elicited positive responses from a majority of the subjects. Most subjects agreed that they (1) had a clear sense of what behaviors are right or wrong for themselves; (2) were proficient in deciding which task to do among several options; (3) maintained their focus on important activities; (4) began prioritized tasks immediately; (6) were able to estimate the time required to complete a task; (7) analyzed their self-talk about problem areas; (10) kept their work space well organized; (11) knew what they wanted to experience in life; (13) completed tasks on time as promised; (15) were clear about important personal qualities they wanted to develop; (16) matched tasks to their own energy level; (17) subdivided larger tasks into smaller tasks; (18) had clear personal achievement goals; (19) worked at keeping the place where they spent most of their time more attractive; and (22) kept their living space orderly.

In contrast, only four self-management practices were reported to be infrequently applied. Most subjects indicated that they seldom (5) wrote down the pros and cons of anticipated behavior change; (8) wrote down their life goals; (9) shared their plans for

personal change with others; nor (14) wrote down their yearly goals.

Another approach to assessing LSA items included examining their individual relationships to the total LSA score. Each item was correlated with the "corrected" total score (i.e., total scores excluded the item in question for each computation). Items with correlation coefficients of .40 or greater ($p < .0001$) were 2, 3, 6, 16, 21--Factor 1; 11, 18--Factor 2; 4, 13--Factor 3; 10, 22--Factor 4. Combined, these items constitute a clear sense of direction, efficiency, and orderliness (Table 5). Although Factors 5 and 6 contain some items with significant correlations to the total LSA score, only one was greater than .30. By far, item 9 had the weakest relationship to the total LSA score. Apparently, informing others of plans for personal change is not an important contributor to overall self-management.

LSA Items and Health Habits

LSA items correlating moderately but significantly ($p < .0001$) with the Health Habits Scale (HHS) total, as shown in Table 5, were 3, 6, 16, 21--Factor 1; 1, 11, 15--Factor 2; 4, 13, 17--Factor 3; 10, 19, 22--Factor 4. No items loading on Factors 5 or 6 were related

Table 5. Correlations Between LSA Items and
Total LSA and Total HHS

	<u>Total LSA</u>	<u>Total HHS</u>
Factor 1 Performance Focus and Efficiency		
2	.40	.13 NS
3	.52	.23
6	.42	.19
16	.43	.24
21	.40	.19
Factor 2 Goal Directedness		
1	.25	.18
11	.42	.18
15	.39	.24
18	.40	.13 NS
Factor 3 Timeliness of Task Accomplishment		
4	.48	.18
13	.48	.23
17	.36	.15
20	.36	.10 NS
Factor 4 Organization of Physical Space		
10	.41	.16
19	.37	.17
22	.44	.26
Factor 5 Written Plans for Change		
5	.24	.10 NS
8	.36	.09 NS
14	.24	.06 NS
Factor 6 Verbal Support for Self-Management		
7	.30	.12 NS
9	.08 NS	-.02 NS
12	.18	.00 NS

Notes: LSA item to (corrected) LSA total score correlations do not include the item in question in the computations of the LSA. Unless noted NS, all correlations are significant at the .0001 level.

significantly to the HHS score. Estimating the time and energy required to finish a job, staying on task, establishing personal values and goals, and working efficiently and in an orderly environment appeared to be linked to health-related behaviors. Writing down one's plans for change (Factor 5) and using verbal support for behavior change plans (Factor 6) were not related to health behaviors.

Validity

The validity of the self-management instrument, Life Style Approaches (LSA), was assessed by correlating its factors and total scores with conceptually related and unrelated variables. Pearson correlation coefficients between the LSA and those comparison variables are shown in Table 6.

Concurrent Validity

Predictions that the LSA would relate to (1) a greater sense of personal control over events in one's life, (2) a belief that one is able to do those things leading to positive outcomes in their life and (3) good health habits were generally supported by the findings. Most correlations were significant at the .0001 level. All LSA factors negatively and significantly correlated with locus of control. This direction is consistent

Table 6. Correlations of LSA Factors with Comparison Variables

Factors	Variables					
	I-E Scale	Gen Self Eff	Soc Self Eff	Relig Bel	Relig Prac	Health Habits Scale
1. PF & E	-.25	.67	.29	.00 (NS)	.07 (NS)	.28
2. GD	-.23	.53	.31	.08 (NS)	.14	.25
3. TTA	-.21	.48	.25	.04 (NS)	.05 (NS)	.23
4. OPS	-.17	.35	.18	.10 (NS)	.08 (NS)	.25
5. WPC	-.19	.24	.20	-.06 (NS)	.03 (NS)	.11 (NS)
6. VSSM	-.14	.16	.25	.00 (NS)	.03 (NS)	.05 (NS)

Notes: Unless noted NS, all correlations are significant at the .0001 level. Factor abbreviations: PF & E = Performance Focus and Efficiency; GD = Goal Directedness; TTA = Timeliness of Task Accomplishment; OPS = Organization of Physical Space; WPC = Written Plans for Change; VSSM = Verbal Support for Self-Management.

with the predicted relationship, because a high I-E Scale score (LOC) indicates a lesser sense of personal control and a low score suggests a greater sense of personal control over one's life. Except for Verbal Support for Self-Management, the LSA factors were correlated more strongly with General Self-Efficacy than with any of the other comparison variables. Relationships between all six LSA factors and the General Self-Efficacy scale were significant ($p < .0001$). Significant positive relationships between LSA factors and the Health Habits Scale were obtained for Factors 1 through 4: Performance Focus and Efficiency, Goal Directedness, Timeliness of Task Accomplishment, and Organization of Physical Space.

Discriminant Validity

As expected, Social Self-Efficacy did not correlate as strongly with self-management as did General Self-Efficacy. However, a moderate relationship was obtained between the LSA scores and Social Self-Efficacy. For the SSE, weakest links were with LSA Factors 4 and 5 (Organization of Physical Space and Written Plans for Change). Only the Verbal Support factor correlated more strongly with Social Self-Efficacy than with General Self-Efficacy. Both

dimensions of the Religious Survey (beliefs and practices) were generally unrelated to the LSA factors. There was a very modest significant relationship between Religious Practices and the Goal Directedness factor.

Reliability

Cronbach's alphas for the factors ranged from .38 to .71. Internal consistency for the entire LSA instrument was .80. The less impressive individual factor reliabilities were probably due to the small number of items loading on each one. The alphas for Factors 1 through 6 were .71, .66, .64, .60, .71 and .38, respectively. Certainly, the latter is unacceptably low and casts some doubt on the utility of the sixth factor (Verbal Support for Self-Management).

Summary

The findings were generally as expected. Certain self-management strategies were found to be more frequently employed than others; LSA factor were substantially related to the total LSA; and several self-management strategies were related to health behaviors. The comparison variables that were predicted to be correlated with the LSA proved to be

so. Those expected to be unrelated to the LSA were not significantly related. Internal reliabilities of the LSA factors ranged quite broadly from .38 to .71, and a respectable Cronbach's alpha for the total was obtained (.80).

CHAPTER V

DISCUSSION

Validity

The importance of the LSA lies in what it can predict. The paramount issue is that the validity of the LSA relates to its ability to represent self-management as a construct both independently and relative to valid measurements of correlated and uncorrelated constructs. The results of this study indicate that the LSA is a cohesive instrument subsuming several strategies generally accepted as conducive to self-control and an instrument that correlates as expected to measurements of important conceptually related and unrelated variables. The LSA correlated most highly with general self-efficacy, less well but significantly with social self-efficacy, and equally well with internal control orientation and health habits. At the same time, it bore little relationship to religious beliefs or practices.

The strong relationship between general self-efficacy and the LSA could suggest similarity or overlap of the constructs. Nonetheless, these constructs seem to be conceptually distinct. For

example, the belief that one can accomplish a goal appears to be different from the self-reported attainment of that goal. Confidence in one's ability to organize and attack a series of tasks does not guarantee that adequate steps will be taken to success. Actually meeting deadlines is a better measure of performance than the belief that one can complete a task in a timely fashion.

Social Self-Efficacy (SSE) correlated less strongly than the GSE with most of the LSA factors. Only the Verbal Support factor correlated more strongly with the SSE than with the GSE. Because the Verbal Support items related to both interpersonal and intrapersonal events, this factor could reasonably be expected to be more strongly related to the SSE than the GSE.

The significant negative correlations between the I-E Scale and LSA ($-.32$) total and all LSA factors indicate that attributing outcomes to external forces is inversely related to reporting adequate control over one's own life activities. This pattern suggests that externally oriented people are likely to be less organized, less focused, less goal directed and efficient, and less likely to formalize their plans or

mobilize verbal support than are internally oriented individuals.

Applying self-management strategies appears to be linked to practicing good health habits. Four of the six LSA factors appeared relevant to health practices. Focus, efficiency, goal orientation, and organization of physical space all correlated with healthful activities. Formalizing plans for change and seeking support from others were not significantly related to healthful practices.

The religious beliefs that individuals reported and how they reportedly acted upon those beliefs bore no relationship to whether they controlled their activities effectively. Only one factor, Goal Directedness related (weakly) to either religious beliefs or practices. Religious Beliefs and Religious Practices totals were generally unrelated to the LSA total.

Factor Structure

Strong relationships among the factors of the LSA could cast some doubt on the independence of the factors. However, the rather stringent criteria utilized during the factor analysis must be recalled. Factor items were selected when they loaded at .50 or

greater on only one factor, and every factor had three or more items loading on it. There was no ambiguity as to where an item loading at .50 or greater should be placed among the factors. The items were relatively "pure" contributors to their respective factors inasmuch as they each loaded heavily on one and only one factor.

The inter-relationships of factors suggest that improvement in one area of self-management could be linked to improvement in other areas. The practices described in the LSA are subjectively tangible, observable, and measurable. Therefore, they are likely to contribute directly to quality of life and create their own individual reinforcement value, even in situations where they are initially somewhat aversive. For example, taking the time to arrange and organize one's workplace may not seem enjoyable; but as it contributes to efficiency, reduced stress, and productivity, the organizational process itself may become somewhat pleasurable.

Internal Consistency

A respectable internal consistency coefficient of .80 (Cronbach's alpha) lends credibility to the LSA as a screening instrument. Although the number of items

in the LSA is quite small, improving reliability by increasing the number of items should be considered carefully in light of the effect this could have on the factor structure. It might be possible to increase overall reliability through such a method, but in the process undermine the factor structure already in place. Additional items may introduce factors having less clarity and fewer items loading on them. Although they do not exhaustively represent the self-management construct, the LSA items are consistent with the clusters of other self-management instruments. Additional LSA items would probably require expansion of the conceptual framework. This could loosen the foundation of a compact instrument and re-introduce validity questions that are currently being addressed.

Limitations of the Study

Although the LSA items are relatively pure, the factor structure is complex. The subject pool included subsets (i.e., gender, age, educational status) against which the LSA factor structure could have been tested. Testing situations varied markedly, and although this may have affected factor structure outcomes, test settings were not controlled. Generalizations drawn from results are constrained by the predominantly

single, young, white, female, college student subject pool.

The testing time of 1 and 1/2 to 2 hours was quite long and may have adversely affected the subjects' concentration on the task at hand. Because four of the five instruments in this study were positioned in the last half of the test battery, responses to these inventories may have been impaired by fatigue.

Self-report instruments are subject to inflated or otherwise inaccurate scores. Certainly, one can argue that subjects tend to over-report good qualities and under-report negative attributes about themselves. However, every instrument in this battery was based in self-reporting techniques. Therefore, such method variance should apply across the board and affect each score in a similar manner.

Recommendations for Future Research

The strengths of relationships among LSA factors and those between LSA factors and comparison variables were markedly different for LSA factors 1 thru 4 and 5/6. Scrutiny of the contributions of factors 5 and 6 should focus on their importance to the LSA total.

Test-retest reliability has yet to be established, and the internal consistency of factor six remains a

problem. Several useful questions could have been answered using the readily available demographic information (e.g., gender related LSA differences, importance of achievement to LSA performance, the linkage of social relationships to self-management factors, and the impact of race and age on LSA outcome). These issues are being addressed in continuing analysis of the LSA but were not considered within the scope of the current study.

Conclusions

Despite the previously identified shortcomings, the LSA is an efficient, time-saving tool to assess self-management practices. It requires only 10 to 15 minutes to complete and respondents can compute their own factor scores in nearly the same amount of time. The LSA can be included easily in a battery of psychological instruments or used efficiently in workshops and other training sessions on self-management.

Of the various self-management scales discussed in this dissertation, only the LSA evolved directly from an integrated text on self-management. Because this text is based on the self-management research spanning the last twenty years, the LSA can be thought of as

evolving from a broad spectrum of self-management literature. The items and factors in the LSA reflect a diversity of cognitive and behavioral strategies for improving one's life, yet these items and subscales share a coherent theme of life style organization. This latter theme more clearly reflects the planning and follow through needed to manage one's life efficiently and effectively than do any of the dimensions reflected in other self-management instruments.

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APPENDICES

APPENDIX A

Surveys in the Battery

1. Personal Influence Scale
2. Rotter I-E Scale
3. The Life Satisfaction Index
4. Demographic Survey
5. The Rand Scale of Perceived Health Status
6. Framingham Anger Scale
7. Perceived Stress Scale
8. State-Trait Anger Scale
9. Life Orientation Test
10. Health Habits Checklist
11. Purpose in Life Test
12. Life Style Approaches
13. Self-Efficacy Scale
14. The Marlowe-Crowne Scale
15. Word Preference Test
16. Religious Survey

APPENDIX B

ROTTER ATTITUDE INVENTORY

This inventory consists of a number of pairs of statements. Please choose the statement in the pair which is most characteristic of what you believe and darken in the space for that letter on the attached answer sheet. Example:

86. a. There are certain people who are just no good.
b. There is some good in everybody.

You may believe both A and B are true, or neither A nor B is true. In either case, you must choose the statement with which you agree most. There are no right or wrong answers, so your choices should reflect your beliefs.

73. 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 with them.
74. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
75. a. One of the major reasons why 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.
76. 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.
77. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
78. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
79. 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.
80. a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

81. a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
82. 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 course work that studying is really useless.
83. 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.
84. 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.
85. a. When I make plans, I am almost certain that 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.
86. a. There are certain people who are just no good.
b. There is some good in everybody.
87. 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.
88. 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.
89. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.
90. 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."
91. a. One should always be willing to admit mistakes.
b. It is usually best to cover up one's mistakes.
92. a. It is hard to know whether or not a person likes you.
b. How many friends you have depends upon how nice a person you are.

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

93. 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 lack of ability, ignorance, laziness, or all three.
94. 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.
95. 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.
96. 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.
97. a. Many times I feel that 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.
98. 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.
99. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.
100. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.
101. 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.

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

APPENDIX C

SES

Instructions: This questionnaire is a series of statements about your personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the letter on the answer sheet that best describes your attitude or feeling. Please be very truthful and describe yourself as you really are, not as you would like to be.

Mark:

- A if you DISAGREE STRONGLY with the statement
- B if you DISAGREE MODERATELY with the statement
- C if you neither agree nor disagree with the statement
- D if you AGREE MODERATELY with the statement
- E if you AGREE STRONGLY with the statement

- 49. I like to grow house plants.
- 50. When I make plans, I am certain I can make them work.
- 51. One of my problems is that I cannot get down to work when I should.
- 52. If I can't do a job the first time, I keep trying until I can.
- 53. Heredity plays the major role in determining one's personality.
- 54. It is difficult for me to make new friends.
- 55. When I set important goals for myself, I rarely achieve them.
- 56. I give up on things before completing them.
- 57. I like to cook.
- 58. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
- 59. I avoid facing difficulties.
- 60. If something looks too complicated, I will not even bother to try it.

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

- A if you DISAGREE STRONGLY with the statement
- B if you DISAGREE MODERATELY with the statement
- C if you neither agree nor disagree with the statement
- D if you AGREE MODERATELY with the statement
- E if you AGREE STRONGLY with the statement

- 61. There is some good in everybody.
- 62. If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.
- 63. When I have something unpleasant to do, I stick to it until I finish it.
- 64. When I decide to do something, I go right to work on it.
- 65. I like science.
- 66. When trying to learn something new, I soon give up if I am not initially successful.
- 67. When I'm trying to become friends with someone who seems uninterested at first, I don't give up very easily.
- 68. When unexpected problems occur, I don't handle them well.
- 69. If I were an artist, I would like to draw children.
- 70. I avoid trying to learn new things when they look too difficult for me.
- 71. Failure just makes me try harder.
- 72. I do not handle myself well in social gatherings.
- 73. I very much like to ride horses.
- 74. I feel insecure about my ability to do things.
- 75. I am a self-reliant person.
- 76. I have acquired my friends through my personal abilities at making friends.
- 77. I give up easily.
- 78. I do not seem capable of dealing with most problems that come up in my life.

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

APPENDIX D

HHC

Instructions: This form lists several different behaviors of adults. Using the answer key described below, choose the letter that most closely describes how often you engage in each behavior. For example, if you drink coffee a few times a month, you would mark a C for 183. Since there are no right or wrong answers, try to be objective in reporting your own behaviors.

Answer Key (Frequency of Behavior)

- A. Never
- B. Few times a year
- C. Few times a month
- D. Several times a week
- E. Several times a day

- 183. Drinking coffee
- 184. Flossing my teeth
- 185. Using hard drugs
- 186. Getting adequate rest at night
- 187. Eating excessively
- 188. Participating in vigorous physical activity
- 189. Smoking cigarettes
- 190. Drinking water
- 191. Eating junk food
- 192. Doing stretching exercises
- 193. Gulping meals

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

APPENDIX E

Religious Survey

Instructions: Mark the letter on the answer sheet that most closely corresponds to your belief or practice for each item.

192. How frequently do you attend religious services?

- A. Once or twice a week or more
- B. Once or twice a month
- C. Once or twice every three months
- D. Once or twice a year
- E. Almost never or never

193. How frequently do you read religious/spiritual literature (such as the Bible, Torah, or Koran) simply as a matter of personal choice?

- A. Daily
- B. Weekly
- C. Monthly
- D. Only on special occasions (such as Christmas, Easter, Hanukah)
- E. Almost never or never

194. How frequently do you pray privately (other than in religious services)?

- A. Several times a day
- B. About once a day
- C. Several times a week
- D. Only on special occasions
- E. Almost never or never

For each of the remaining statements, indicate the extent to which you agree or disagree with that statement.

195. The writings in some Holy Book(s) (such as the Bible, Torah, or Koran) should be interpreted literally.

- A. Definitely agree
- B. Tend to agree
- C. Undecided
- D. Tend to disagree
- E. Definitely disagree

196. The idea of life after physical death is simply a myth.
- A. Definitely agree
 - B. Tend to agree
 - C. Undecided
 - D. Tend to disagree
 - E. Definitely disagree
197. God ultimately controls the events in my life.
- A. Definitely agree
 - B. Tend to agree
 - C. Undecided
 - D. Tend to disagree
 - E. Definitely disagree
198. The most important part of my religious convictions is a personal relationship with a deity (such as God or Christ).
- A. Definitely agree
 - B. Tend to agree
 - C. Undecided
 - D. Tend to disagree
 - E. Definitely disagree
199. The idea of an evil spirit (such as Satan) who tempts us to sin is simply a myth.
- A. Definitely agree
 - B. Tend to agree
 - C. Undecided
 - D. Tend to disagree
 - E. Definitely disagree
200. People are inherently good; bad behavior results primarily from negative influences in people's lives.
- A. Definitely agree
 - B. Tend to agree
 - C. Undecided
 - D. Tend to disagree
 - E. Definitely disagree

PLEASE RE-CHECK THE ANSWER SHEET TO BE SURE YOU HAVE
MISSED NO ITEMS ON THESE PAGES.

APPENDIX F

Life Style Approaches

Instructions - For each of the following items, indicate how different or similar that item is to your life style. Use the following scale:

- (A) Very different from me
- (B) Somewhat different from me
- (C) Uncertain
- (D) Somewhat similar to me
- (E) Very similar to me.

Simply indicate your answer by marking the appropriate letter for that item on the answer sheet. Before beginning the inventory, be sure you have marked your ID number on the front and back of answer sheet 2. Be sure to mark your answer to each item. Please make no marks on the questionnaire.

1. In most situations, I have a clear sense of what behaviors would be right or wrong for me.
2. When confronted with many different things to do, I have difficulty deciding what is most important to do.
3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.
4. Once I decide what is most important to do at any given time, I start on that task right away.
5. I have little idea as to what I most want to achieve in my life.
6. I have a clear sense of what I most want to experience in my life.
7. I'm confused as to the kind of personal qualities I want to develop in my life.
8. I have no specific yearly goals related to my life goals.
9. I have written down my life goals.
10. I seldom write down my yearly goals.
11. I make a list of things I want to do each day.

PLEASE RE-CHECK ANSWER SHEET 2 TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

Response Code: (A) very different, (B) somewhat different,
(C) uncertain, (D) somewhat similar, (E) very similar

12. What I do each day is unrelated to my long-term goals.
13. I keep my work space well-organized.
14. My living space is quite messy.
15. I actively work to make the place where I spend a lot of time more attractive.
16. I have difficulty judging how long it will take me to complete a task.
17. I often get myself overcommitted before I realize it.
18. I am able to say "no" to requests which would overload me.
19. I complete tasks at the time I say I'm going to complete them.
20. I seldom set target dates for the completion of my tasks.
21. I sub-divide big tasks into a series of smaller tasks.
22. I complete major tasks well in advance of deadlines.
23. I work better when others set deadlines for me than when I set my own deadlines.
24. I have set routines for tasks I do repeatedly.
25. If I have many different tasks to do, I will group similar tasks.
26. I combine dull activities (e.g., cleaning the house) with more interesting activities (e.g., watching television, listening to music).
27. I plan ahead to make good use of waiting time (such as at the physician's office).
28. When I am in a supervisory role, I am quick to delegate responsibility to others.
29. When possible, I schedule my most difficult tasks late in the day.

PLEASE RE-CHECK ANSWER SHEET 2 TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

Response Code: (A) very different, (B) somewhat different, (C) uncertain, (D) somewhat similar, (E) very similar

30. I have difficulty matching various tasks with my energy level.
31. I primarily take on those commitments which are related to my life goals.
32. I know how much time I can devote to work and still keep the rest of my life in balance.
33. I have difficulty determining when I need to change an area of my life.
34. Once I recognize that an area of my life needs to be changed, I begin working on that area right away.
35. I seldom ask for feedback from others about behaviors I need to change and how best to change those behaviors.
36. If I need to change an area of my life, I identify personal behaviors related to the problem area.
37. I write down the pro's and con's of any behavior change I am considering.
38. When I am attempting to change an area of my life (e.g., lose weight, stop smoking), I seldom keep records of behavior(s) related to my goal.
39. When I am trying to change a behavior, I often graph my behavior changes.
40. When I begin a personal change project, I generally keep my plans to myself.
41. If I want to change a personal behavior, I arrange my physical environment so that it contributes to that change.
42. If I want to change a personal behavior, I increase my contact with others who are supportive of that change.
43. I seldom reward myself for making progress toward my behavior goals.
44. I seldom analyze what I am saying to myself regarding problem areas in life.

PLEASE RE-CHECK ANSWER SHEET 2 TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

Response Code: (A) very different, (B) somewhat different,
(C) uncertain, (D) somewhat similar, (E) very similar

- 45. I deliberately change the way I talk to myself about problem areas in my life.
- 46. When I deviate from my selected goal, I have a hard time getting back on track.
- 47. If I fail in my first attempt to change an area of my life, I assume that area probably can't be changed.
- 48. The important areas of my life are out of balance.

PLEASE RE-CHECK ANSWER SHEET 2 TO BE SURE YOU HAVE MISSED NO ITEMS ON THIS PAGE.

APPENDIX G

Life Style Approaches (LSA)

Instructions: For each of the following items, indicate how different or similar that item is to your life style. Use the following scale:

- (A) Very different from me
- (B) Somewhat different from me
- (C) Uncertain
- (D) Somewhat similar to me
- (E) Very similar to me

Simply indicate your answer for each item by placing the appropriate letter in the blank before that item.

- _____ 1. In most situations, I have a clear sense of what behaviors would be right or wrong for me.
- _____ 2. When confronted with many different things to do, I have difficulty deciding what is most important to do.
- _____ 3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.
- _____ 4. Once I decide what is most important to do at any given time, I start on that task right away.
- _____ 5. I write down the pro's and con's of any behavior change I am considering.

- _____ 6. I have difficulty judging how long it will take me to complete a task.
- _____ 7. I seldom analyze what I am saying to myself regarding problem areas in life.
- _____ 8. I have written down my life goals.
- _____ 9. When I begin a personal change project, I generally keep my plans to myself.
- _____ 10. I keep my work space well-organized.
- _____ 11. I have a clear sense of what I most want to experience in my life.
- _____ 12. I seldom ask for feedback from others about behaviors I need to change and how best to change those behaviors.
- _____ 13. I complete tasks at the time I say I'm going to complete them.
- _____ 14. I seldom write down my yearly goals.
- _____ 15. I'm confused as to the kind of personal qualities I want to develop in my life.
- _____ 16. I have difficulty matching various tasks with my energy level.
- _____ 17. I subdivide big tasks into a series of smaller tasks.

- _____ 18. I have little idea as to what I most want to
achieve in my life.
- _____ 19. I actively work to make the place where I spend a
lot of time more attractive.
- _____ 20. I complete major tasks well in advance of
deadlines.
- _____ 21. When I deviate from my selected goal, I have a
hard time getting back on track.
- _____ 22. My living space is quite messy.

Scoring Procedures for LSA

For the positive items (+), use the following scale in recording your response: A-0, B-1, C-2, D-3, E-4. For the negative items (-), use the following scale in recording your response: A-4, B-3, C-2, D-1, E-0.

Factor (Performance Focus and Efficiency)

- 2 _____

- 3 _____

- 6 _____

-16 _____

-21 _____

Factor 1 Total _____

Factor 2 (Goal-directedness)

+ 1 _____

+11 _____

-15 _____

-18 _____

Factor 2 Total _____

Factor 3 (Timeliness of Task Accomplishment)

+ 4 _____

+13 _____

+17 _____

+20 _____

Factor 3 Total _____

Factor 4 (Organization of Physical Space)

+10 _____

+19 _____

-22 _____

Factor 4 Total _____**Factor 5 (Written Plans for Change)**

+ 5 _____

+ 8 _____

-14 _____

Factor 5 Total _____**Factor 6 (Verbal Support)**

- 7 _____

- 9 _____

-12 _____

Factor 6 Total _____**Grand Total of factor totals** _____ (your total score on LSA)

VITA

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Carol Moore worked in the public schools of Georgia and Tennessee as a School Psychologist for fourteen years and is a past president of the Tennessee Association of School Psychologists. Presently, she is the Director of Development at the Cherokee Mental Health Center in Morristown, Tennessee, and is actively engaged in improving healthcare services for the indigent in rural East Tennessee.