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4

PSYCHOMETRIC EXAMINATION OF AN ADULT SELF-REPORT SELF-MANAGEMENT INVENTORY

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Damaris Olsen Young

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ABSTRACT

The purposes of this study were (a) to examine the psychometric properties of an adult self-report inventory, the Self-description Form (SDF), measuring broad-spectrum self-management effectiveness, and (b) to make recommendations for the further development of the instrument. The 56-item SDF quantifies self-management effectiveness in terms of the self-reported occurrence of effective behaviors and nonoccurrence of ineffective behaviors across broad dimensions of life activities. The dimensions are represented in four proposed subscales: Work, Social, Health, and Leisure. A Total self-management score is computed by totalling the subscale scores.

The SDF was administered to 1640 participants, 1025 college and technical school students and 615 nonstudents, from diverse economic, occupational, and geographic backgrounds, ages, and levels of presumed self-management effectiveness. The SDF was found to be sufficiently temporally reliable for group comparisons and modestly internally reliable with the deletion of the 17 self-management items with less than .20 corrected item-total scale correlations. The Health subscale, first, and the Work subscale, second, were the most construct valid of the subscales as evidenced in their correlations with the Total scale; power to distinguish among poor, average, and good self-managers; and relationships with related respondent and external criterion measures. The content validity of the Leisure subscale was highly questionable, although this subscale was the most internally reliable. Serious measurement problems existed with the Social subscale, but its internal consistency reliability was adequate for scale retention. Factor analytic clusters within the

instrument were weak but suggestive of three of the original subscales. The study's major finding was that logical derivation has provided the SDF an excellent beginning for the next stages of scale construction. The general recommendation was that this examination should represent the foundation for more extensive investigation and empirical derivation combined with a rational approach in instrument development. Specific recommendations were made for immediate minor revisions, further psychometric examination, and possible future major revisions of the SDF.

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CHAPTER I

INTRODUCTION

Statement of Purpose

The conceptualization of the psychological change process has recently included covert cognitive and self-regulatory activities within operant theory and technology (Bandura, 1981; Karoly, 1982; Kendall & Hollon, 1979; Mahoney & Arnkoff, 1978). This focus emphasizes how the individual controls the environment, rather than how the environment controls the individual. This integration of behavioral, self-control, and cognitive learning theory has engendered self-management psychology and practice. Professional literature has evidenced a rapid expansion in self-management theory (e.g., Hall, 1980; Kanfer & Karoly, 1972; Karoly & Kanfer, 1982; Mahoney & Thoresen, 1974; Goldfried & Merbaum, 1973; Thoresen & Mahoney, 1974),.research (e.g., Hall, 1980; Kanfer, 1979; Karoly & Kanfer, 1982; Stuart, 1977), and therapeutic and educational applications (e.g., Karoly & Kanfer, 1982; Watson & Tharpe, 1977; Williams & Long, 1983).

Drawing from the empirical support for self-control and cognitive learning therapies, self-management therapeutic applications also promise to fill the deficit of the behavior therapies. The behavior therapies have produced dramatic short-term changes with some human problems but their deficit is "a discouraging record for maintenance and generalization of change" (Thoresen & Coates, 1980, p. 30). The self-management approach promises to foster greater long-term change. However, its techniques and applications have proliferated within a tentative and incomplete

theoretical framework (Kanfer, 1980), with limited direct empirical support, and with a narrow-band treatment approach.

The narrow-band self-management approach originated in behavior therapies' one-dimensional focus on targeted behavior change. Consistent with this narrow focus, self-management assessment has usually involved initially making an interview-based choice of one or a few specific targeted overt behaviors to be managed by the individual (Kanfer & Grimm, 1977). Self-management effectiveness has then been determined by comparing frequency counts of those targeted overt behaviors at baseline and post self-management intervention. Measurement has been in such typical units as pounds lost (Mahoney, Moura, & Wade, 1973), amount of alcohol consumed (Miller, Pechacek, & Hamberg, 1976, cited in Miller, 1977), frequency of nailbiting (Frankel & Merbaum, 1982), and goals set for studying behavior and amount of time spent studying (Lopez & Wambach, 1982).

Research evidence for the effectiveness of self-control and cognitive learning therapies (Mahoney & Arnkoff, 1978) and self-management programs (Kanfer, 1980; Karoly, 1982) is generally favorable, but limited, preliminary, and primarily from analogue situations. Similar to the behavior therapies, the narrow-band self-management approach has produced short-term but not long-term success (Hall, 1980; Kanfer & Karoly, 1982; Karoly, 1982). The only exception has been with anxiety-related disorders which have a single identifiable core problem and have evidenced long-term success with restricted self-management interventions (Hall, 1980).

These gaps in research, theory, and practice imply that the self-management field needs a broadened view of self-management and

self-management assessment. A validated procedure to measure broad-spectrum self-management effectiveness would be of critical value in providing the empirical base currently sought in the self-management field. The purposes of this study were (a) to examine the psychometric properties of an adult self-report inventory, the Self-description Form (Thomas, Williams, & Olsen, 1982), assessing broad-spectrum naturalistic self-management effectiveness and (b) to make recommendations for the further development of the instrument.

Review of Literature

A number of developments in the self-management field converge to underscore the need for this study in particular and for a broadened scope in self-management assessment in general. The following interrelated developments will be reviewed:

1. the cognitive-behavioral emphasis on personal mediation or cognitive processes and the behavioral manifestations presumed to be influenced;

2. the focus on systematic, planned incorporation of self-management techniques into ongoing treatment process to enhance maintenance and generalization of change;

3. the expansion in perspective to "self-management as lifestyle";

4. the initiation of the study of self-regulatory failure as an active process, rather than as merely the absence of generalization and maintenance; and

5. the escalation of the role of self-management in the health psychology and primary prevention movements, and vice versa.

Next review of relevant instruments and procedures cited in the

formal literature and of preliminary findings with the Self-description Form will be provided. Conclusions will be drawn in terms of the projected advantages the validated SDF might hold for self-management assessment.

Cognitive Behavioral Movement

Until recently self-management has been viewed as essentially the self-application of strategies developed under a conditioning paradigm (cf. Brigham's more radical behavioral perspective, 1982). With the cognitive behavior movement, focus has shifted to the "self" component of self-management. The self-component is seen as "loaded heavily with cognitive processing variables" (Kendall & Williams, 1982, p. 241). Thus, the increasing emphasis in assessment has been upon the personal mediation, or cognitive processes, e.g., plans, images, values, beliefs, expectancies, thoughts, decision-making, and problem-solving (Nay, 1979). Procedures for assessing cognitive phenomena have generally emphasized client-given information regarding conscious cognitive events, such as self-statements, internal dialogues, irrational beliefs, and self-evaluations of performance (cf. Kendall & Hollon, 1981; Kendall & Korgeski, 1979; Merluzzi, Glass, & Genest, 1981). Turk and Speers (1983) have recently encouraged assessors to identify (a) cognitive schemata, or constructs, which give rise to the cognitions (e.g., the self-protective function of a negative self-label), and (b) the cognitive mechanisms by which these cognitive schemata produce and maintain maladaptive thoughts, feelings, and behaviors.

Although representing a needed and promising advance, this emphasis on the self-component may portend "the dangers of a retreat to pure

cognitivism" (Karoly, 1982, p. 27). In 1981, Karoly cautioned:

> A danger in conducting a largely cognitively oriented assessment program is the tendency to become absorbed in the measurement of mediational processes, sometimes to the exclusion of the behavioral manifestations they are presumed to influence. The contemporaneous assessment of the overt behavioral evidence for self-management deficiencies or excesses (along with the analysis of hypothesized components) should keep assessors attuned to the ultimate products and objectives of their inquiry and, it is hoped, prevent them from getting lost in the kinds of conjecture that have hampered traditional (nonbehavioral) forms of assessments. Both the starting point and the finishing line for any clinical measurement operation must be represented by the collection of overt behavior samples... (p. 113)

A purely cognitive or purely behavioral model of self-management is linear and inadequate to describe the complexity of self-management processes. Contemporary self-management theorists seek a conceptual model which is multidimensional and multidirectional (Bandura, 1981; Karoly, 1981) and which integrates cognitive, psychological, social, overt behavioral, and physical environmental factors (Thoresen & Coates, 1980). As described by Kanfer and Karoly (1982), the self-management process "relies on a continuous interplay of internal (cognitive or imagined processes) and external cues and contingencies" (p. 579). A cognitive-behavioral model which is comprehensive, multicomponent, and genuinely integrated is required to address the multicomponent, multideterminant, mutually interactive processes involved in successful self-management (Bandura, 1981; Fremouw & Gross, 1983; Kanfer & Karoly, 1982; Karoly, 1981, 1982).

Optimally, the clinical measurement model should include a multiplicity of overt and covert behavioral targets and procedures (Kanfer & Grimm, 1980; Kendall & Williams, 1982; Nay, 1979). Primacy must also be given to the behavioral dimensions: "Behaviors are important to measure

in and of themselves" (Nelson, 1983, p. 200-201). For example, interview data, direct observation of the client, analogue simulation tests, free-response written materials, and standardized tests would be legitimate assessment sources (Karoly, 1981, 1982; Kendall & Hollon, 1981; McFall & Dodge, 1982).

What would be optimal and what is currently reality are quite different. In practice, clinicians, assessing under time pressure, tend to use "shortcuts via subjective estimate, conjectures, and inferences" based on interview information or unvalidated procedures (Kanfer & Karoly, 1982, p. 587). Furthermore, even for the clinician-researcher pursuing a more comprehensive assessment, a dearth of validated or multidimensional self-management procedures exists.

Maintenance and Generalization of Change

Another trend with implication for assessment has been the emphasis upon maintenance and generalization of change. Recent efforts have involved enhancing maintenance and transfer of treatment gains by incorporating systematic, planned techniques into the ongoing treatment process (Goldstein, Lopez, & Greenleaf, 1979; Stokes & Baer, 1977). Goldstein et al. (1979) and Thoresen and Coates (1980) have lamented that most traditional and, until recently, behavioral therapies have erroneously assumed the automatism of generalization, maintenance, and transfer.

In the cognitive-behavioral view of self-management, mediating responses have been targeted in addition to specific overt responses in given situations. Examples of mediating responses have included coping skills, problem-solving methods, behavioral rehearsal, interpersonal

skills, decision-making, behavioral conduct rules or self-instructions, and planning. It is assumed that new patterns of these mediating actions can be taught; can function as strategies applicable in many different situations; and, thus, should result in trans-situational generality (Kanfer, 1979). Extended duration and generalization of change would be expected when generated and imposed by self rather than by environmental sources.

The maintenance, transfer, and generalization of therapy-based learning to new (previously nontargeted) behaviors and real-world situations are the ultimate goals and the promise of self-management interventions (Deffenbacher & Suinn, 1982; Goldstein & Kanfer, 1979; Karoly & Steffen, 1980). As Hall (1980) has stressed, "Conceptually, self-management and maintenance of change are inseparable" (p. 270).

The implication for self-management assessment is for the inclusion of nontargeted and trans-situational behaviors in the real world. Further implied is that measurement of generalized changes for extended periods of time is the only adequate way to assess ultimate self-management. As Deffenbacher and Suinn (1982) have written, "without the inclusion of nontargeted measures, it is unclear whether the effects [of self-management interventions] are target specific or whether clients have truly learned generalized preventive coping skills" (p. 435). Again, the need is for measures of behavioral end products as well as process behaviors to determine the results of broad application of self-managing skills. In terms of the effects of self-management intervention on maintenance and generalization, currently the data base is very limited; and thorough assessment is lacking (Kanfer, 1979).

Self-management as Lifestyle

Another development in self-management has been stress upon the requirement for changes in lifestyle patterns to afford lasting self-management (Karoly, 1982; Stuart, 1980; Thoresen, 1980; Williams & Long, 1983). The concept of a self-managed lifestyle enlarges the view that self-management is useful only for resolving specific problems. This broader perspective has also been reflected in a trend toward "self-management as lifestyle" treatment programs (Karoly, 1982, p. 22-23). One treatment program with a particular emphasis on lifestyle assessment and changes to a more balanced lifestyle is the self-management treatment approach advocated by Marlatt and associates (Marlatt, 1978; Marlatt & Gordon, 1980; Marlatt & Parks, 1982) for individuals with addictive behaviors.

Self-management theory makes several assumptions integral to the expanded perspective of "self-management as lifestyle." A basic view is that the quality of one's life is experienced very much in terms of good and bad occurrences. It is assumed that those occurrences are affected by one's behavior. The personal perception that encompasses this assumption is called internal locus of control (Rotter, 1954). By utilizing various self-managing processes (e.g., behavioral programming or environmental planning), one can greatly alter the probability of the occurrence of problematic and adaptive behaviors (Thoresen & Mahoney, 1974). The "adjusted" (Watson & Tharpe, 1977) or "personally free" (Mahoney & Thoresen, 1974) individual applies self-managing processes that will induce and maintain behaviors in harmony with the environment (including societal values) and with his or her personal values or goals. In

essence, an important component of the quality of life is grounded in the daily events of specific individual behaviors and patterns which can be changed by self-management (Thoresen, 1980; Williams & Long, 1983).

A further assumption is that quality of life is achieved by managing those daily events across all major dimensions of one's life--lifestyle self-management (Williams & Long, 1983). Quality of life is not adequately achieved by only the "surgical removal" of problem behaviors (Kanfer & Grimm, 1980). It logically follows that self-management effectiveness should be quantifiable in terms of (a) the presence of behaviors valued both by self and by the environment (including society), (b) the absence of maladaptive behaviors, and (c) behavioral occurrence across dimensions of daily living.

"Self-management as lifestyle" as a construct and psychometric dimension may assist in clarifying the self-management process. To understand this construct's possible assistance, one must first understand how the self-managed "response-chain-process" of the individual is conceptualized. Everyday behavior consists of generally smooth chains of reactions with responses being cued by completion of previous responses (Kanfer, 1980). According to social learning theory, responses are also interacting in a reciprocally deterministic process manner with thoughts and other personal factors, environmental variables, and other responses (Bandura, 1978). Self-managing psychological processes are adaptively implemented when the chains of smooth "everyday" activities are disrupted (Kanfer, 1980). Disruptions may occur with learning new behavior, being in a new situation, or having everyday responses produce unexpected results.

Within this self-managed process, lifestyle self-management may represent any of several points. It may represent an end product desirable in and of itself. For example, it may reflect the generalized, durable application of such self-managing behaviors as criterion-setting, self-evaluation, self-reinforcement, and planning. Or lifestyle self-management effectiveness may function as a real-world process, or mediating, variable serving as a setting event for self-management of targeted overt maladaptive and adaptive behaviors. Which type of self-management occurs first, or does self-management of lifestyle and of targeted overt behavior(s) function in a mutually interactive manner?

Lifestyle self-management may operate in a response covariation manner. In defining an individual's problem behaviors, it has seemed increasingly important to examine clusters and interdependencies of behaviors over time and across situations (Mash, 1979). Recent work examining the ecobehavioral networks of distressed families with oppositional children (Patterson, 1976; Wahler & Fox, 1980; Wahler & Dumas, in press; Wahler & Graves, 1983) has demonstrated the significance of nontargeted behavioral interactions (aversive adult interchanges) serving as controlling stimuli for aversive parent-child interactions. In a functionally similar manner, an individual's lifestyle self-management patterns may operate in response covariation with management of specific problem behaviors. Perhaps the response relationship is mediated via effective management of stressors. More effective lifestyle management may lead to more effective management of stress, less stress, and, consequently, more energy to devote to the management of problematic behaviors.

Self-regulatory Failure as an Active Process

In addition to its possible significance to the self-management process, lifestyle self-management may have particular relevance to "self-regulatory failure" as an active process (Kirschenbaum, 1976; Kirschenbaum & Tomarken, 1982; Tomarken & Kirschenbaum, 1982). In recent efforts to study the failure process, Kirschenbaum and Tomarken (1982) have theorized that the individual is an active participant in the process of generalization failure rather than "an unfortunate victim of inadequate learning" (p. 121). Their view opposes the commonly held notion of self-regulatory failure. Self-regulatory failure has been generally seen as a passive process analogous to a passive extinction/forgetting response to altered environmental contingencies. Kirschenbaum and Tomarken defined self-regulatory failure as describing "all processes by which individuals fail to generalize desired behavior changes over time and across settings in the relative absence of immediate external constraints" (p. 137). They have hypothesized explanation for self-regulatory failure from the following three theoretical models:

1. The closed feedback loop (or negative feedback) model of self-regulation based on Kanfer and Karoly's (1972) model. Included is a failure-to-generalize phase, perhaps reflecting the individual's never having reached the habit reorganization phase of self-regulation (Karoly, 1977).

2. The self-efficacy theory model based upon Bandura's theory (1977) regarding efficacy expectations. Self-efficacy expectations are convictions that one can successfully execute a behavior.

3. The complex cognitive-behavioral model of the relapse process

based upon Marlatt and associates' model. Their model accounts for generalization failures with persons having addictive disorders (Marlatt, 1978; Marlatt & Gordon, 1980; Marlatt & Parks, 1982). Extrapolating from these three theoretical models, one might further theorize the function of lifestyle self-management.

Again, the function of lifestyle self-management might be as a meaningful end product. Lifestyle self-management effectiveness could reflect an individual's success or failure in achieving the habit reorganization theorized by Karoly (1977) in self-generated generalization.

Second, perhaps lifestyle management is an important response variable mediating the processes believed to prevent self-regulatory failure. There are several processes which are hypothesized to prevent self-regulation failure. These include: continued self-monitoring, self-attention and self-consciousness, self-evaluation and self-consequation, recognition and avoidance of high risk problematic situations, positive self-efficacy expectations regarding the targeted behavior, and adequate planning of activities. Kirschenbaum and Tomarken (1982) believe that all of these are perhaps necessary responses exhibited in obsessive-compulsive self-regulation. Successful self-regulators appear to exhibit a healthy obsessive-compulsive self-regulation. Lifestyle self-management could mediate the "overlearning" and obsessive-compulsive implementation necessary in any self-regulatory success.

Third, lifestyle self-management may serve to enhance "self-management self-efficacy expectations" by virtue of the experience

of success in broadly applied self-management. Thus, one would attribute management of one's life to adequate coping skills and strengths and, in turn, would institute self-management of problematic behaviors and situations. Effective lifestyle self-management may represent the repeated engagement in well-mastered behavioral sequences, well-mastered tasks, and behavioral persistence that lead to increased strength and generality of self-efficacy expectations (Kirschenbaum & Tomarken, 1982). The converse, ineffective lifestyle self-management, could contribute to lowered self-management self-efficacy expectations and, thus, self-regulatory failure. Response interdependencies may well exist among lifestyle management, target behavior management, and related self-efficacy expectations.

Thus, the emphasis both on "self-management as lifestyle" as a construct and on self-regulatory failure as an active process raises numerous theoretical questions regarding the role of lifestyle self-management. Validated instrumentation would assist in determining the role of lifestyle self-management as (a) generalization strategy, (b) behavioral correlate, (c) mediating response, and/or (d) consequence of both self-regulatory success and the prevention of self-regulatory failure.

Health Orientation

Another relevant self-management perspective has been promoted by the primary prevention and health movements in psychology. Primary prevention and the developing area of health psychology have increasingly been seen as what should be major targets of clinical and counseling psychological practice (Barclay, 1984; Millon, 1982; Thoresen, 1980; Thoresen &

Eagleston, 1985). Self-management affords a changing view from therapy connoting pathology and a curative enterprise to a focus on health and an educational or training venture (Thoresen & Mahoney, 1974). This self-management view is particulary consistent with the health and primary prevention orientations in psychological practice. Health psychology focuses equally on the promotion and maintenance of health, the prevention of illness, and the treatment of illness (Matarazzo, 1980). In its focus on health, health psychology has dramatically escalated its use of self-management procedures (e.g., Marx & Kolata, 1978; Millon, Green, & Meagher, 1982; Patel & North, 1975; Patel, Marmot, & Terry, 1981). In turn, the self-management field is claiming its rightful place in health psychology and wellness promotion (Thoresen, 1980; Thoresen & Eagleston, 1985; Williams & Long, 1983).

A basic assumption within the concept of prevention is that certain effective human behaviors are valued in our society and are to be fostered and nurtured in the individual's developmental and learning process, e.g., certain academic, vocational, personal, and social skills (Barclay, 1984). If these effective behaviors are fostered, then development of maladaptive behaviors and crisis episodes should be prevented or minimized. Thus, prevention is the "inverse side of crisis coping" (Barclay, 1984, p. 475).

The view of self-management as encompassing broadly generalizable self-managing skills and lifestyle management is certainly congruent with the concept of prevention. Consistent with the expanded view of self-management and with the health and primary prevention orientations, successful self-management behaviors warrant special attention. Most useful would be an assessment of those effective behaviors to be nurtured,

in terms of their occurrence and their deficit, as well as the maladaptive patterns to be minimized or prevented. Interventions then could be made in a primary prevention and health direction matched to the individual's needs.

Published Instruments and Procedures

One comprehensive procedure assessing general lifestyle, not self-management specifically, has been described in the self-management literature. In their self-management treatment approach with alcoholics, Marlatt and associates (Marlatt, 1978; Marlatt & Gordon, 1980; Marlatt & Parks, 1982) have stressed an assessment focus upon the client's general lifestyle. They have found in their research and clinical experience with alcoholics that an individual's drinking behavior is strongly influenced by the degree of balance or imbalance in his or her lifestyle. They defined balance as "the degree of equilibrium that exists in one's daily life between those activities perceived as external demands (the 'shoulds') and those perceived as activities that person engages in for pleasure or self-fulfillment (the 'wants')" (Marlatt & Parks, 1982, p. 476). An imbalanced lifestyle of excessive "shoulds" relative to "wants" is often associated with excessive drinking and other forms of self-indulgence. A lifestyle of excessive "shoulds" relative to "wants" appears to lead to the belief that one "deserves" a drink (binge, etc.).

Marlatt and associates' global lifestyle assessment involved self-monitoring and self-rating. The client would keep a log of all discrete activities or tasks engaged in during the day and evening. Based on his or her subjective perception, the client rated each activity on a scale of 0 to 100. Scores above 50 indicated a greater proportion of

"wants"; and scores below 50, a greater proportion of "shoulds." The daily average score for all activities was called the want/should ratio and was considered to be an index of the degree of lifestyle balance.

Only three previous attempts to develop comprehensive self-management inventories (Humphrey, 1982; Kendall & Wilcox, 1979; Rosenbaum, 1980) have been cited in the formal literature. However, two of these attempts focused on children; and the one developed for adults addressed cognitive self-management processes exclusively.

Kendall and Wilcox (1979) developed a rating scale specifically for the assessment of children's self-control in extratherapy settings. This 33-item Self-Control Rating Scale (SCRS) was developed to be used by teachers and parents in the study of (a) the generalization of self-controlled behavior to extratherapy settings following therapeutic intervention and of (b) the theorized network of relationships associated with self-control in children. Each item contained a 7-point scale with descriptive anchor words on the end of each continuum, e.g., waits to interrupts, always to never. Adults rated the extent to which children exhibited self-controlled actions (e.g., "Does the child stick to what he or she is doing until he or she is finished with it?"), impulsivity (e.g., "Does the child grab for the belongings of others?"), or both possibilities (e.g., "Does the child interrupt inappropriately in conversations with peers, or wait his or her turn to speak?").

The SCRS attained high reliability data, i.e., a test-retest correlation of .84 with 24 randomly selected children and .98 internal consistency according to Cronbach's (1951) alpha. Scores were related to

latency and error scores from the Matching Familiar Figures test, to Porteus Maze performance test, and to observed classroom behavior. One major factor emerged in an orthogonal factor analysis and was labeled cognitive-behavior self-control. Girls were rated as significantly better self-controlled than boys.

Additional support for the validity of the SCRS has been provided in further studies. Children lacking in self-control (a) were considered to be more maladjusted and tended to discharge their conflict onto the environment, (b) tended to demonstrate less social perspective-taking abilities, as measured by Chandler's bystander cartoons (1973), and (c) tended to exhibit more nonself-controlled classroom behavior, e.g., off-task, out of seat (Kendall, Zupan, & Braswell, 1981). Kendall and colleagues (Kendall, 1982; Kendall & Wilcox, 1980; Kendall & Zupan, 1981) have also found sensitivity of the instrument to changes in behavior, such as those produced by treatment.

Humphrey (1982) developed two parallel rating scales on children's self-control: one by teachers' ratings and the other by children's self-ratings. Both the Teachers' Self-Control Rating Scale (TSCRS) and the Children's Perceived Self-Control Scale (CPSCS) were developed to reflect a cognitive-behavioral conceptualization of self-control based on the Kanfer-Karoly (Kanfer, 1971; Kanfer & Karoly, 1972) theoretical model of self-control. On the TSCRS, teachers rated children on 15 self-control items using a 5-point frequency scale and related to two general factors: (a) Behavioral/Interpersonal and (b) Cognitive/Personal Self-Control. On the CPCRS, entitled for the children as "Usually That's Me," the children responded in a yes/no ("usually yes"/"usually no") fashion to 11 items.

Items were related to four factors: (a) Personal Self-Control, (b) Interpersonal Self-Control, (c) Self-Evaluation, and (d) Consequential Thinking. Both teachers' and children's ratings were related to naturalistic observations of on-task and socially off-task behaviors and to teachers' ratings of children's frustration tolerance and acting out aggressive behaviors. The teachers' scale had a more stable factor structure, higher test-retest reliabilities, and more consistent relationships to external criteria, e.g., IQ, achievement, grades, ratings of likeability, and school adjustment. Although the two scales were only weakly related to each other, girls were rated on both scales as better self-controlled than boys.

The only adult instrument cited was a self-report inventory developed by Rosenbaum (1980) to assess tendencies to apply primarily covert self-management methods to the solutions of common behavioral problems. The 36-item inventory, the Self-Control Schedule (SCS), was intended to assess (a) use of cognitions and "self-statements" to control emotional and physiological responses, (b) the application of problem-solving strategies, (c) the ability to delay immediate gratification, and (d) perceived self-efficacy. These targets were to incorporate general coping strategies conceptualized in self-management. The test-retest reliability coefficient was .86 over a four-week period with an Israeli sample. Internal consistency by Kuder-Richardson formula 20 was considered satisfactory for experimental purposes, i.e., .81, .80, .84, .78, and .80 alpha coefficients for five of his six samples. Normative data were comparable among five Israeli samples and one American student sample, which was administered an English version of the SCS. Rosenbaum's

preliminary validation findings indicated self-report of self-control strategy implementation was positively correlated with internal locus of control and ability to control and tolerate a cold pressor and negatively correlated with "irrational" beliefs. Again, female respondents tended to score slightly higher than males.

In the emerging field of health psychology no comprehensive self-management inventories are available. The only related lifestyle surveys for use in the clinical functions of the health psychologist are the Jenkins Activity Survey and the Life Experiences Survey (Green, 1982). The Jenkins Activity Survey (Jenkins, Rosenman, & Zyzanski, 1979) is a self-report questionnaire designed to measure the Type A behavior pattern. The Life Experiences Survey was developed by Sarason, Johnson, and Siegel (1978) to assess an individual's perception of the life stresses experienced during the preceding 12 months.

Self-description Form

The adult self-report inventory, the Self-description Form (SDF), assessing broad-spectrum naturalistic self-management effectiveness was developed by the Self-management Research Group, The University of Tennessee, under the supervision of Robert L. Williams and Mark A. Hector. Preliminary findings have been presented on the development of the SDF with an initial sample of 214 student subjects (Thomas et al., 1982). The four subsamples included (a) university freshmen in a remedial program, (b) university juniors and seniors, (c) graduate students in educational and counseling psychology, and (d) second and third year diploma nursing school students.

The SDF was constructed on a self-report basis because naturalistic observation would be impractical for assessing management of one's behaviors under real-world conditions. Self-management effectiveness was quantified in terms of the self-reported occurrence of effective behaviors and the nonoccurrence of ineffective behaviors across the broad dimensions of life activities. The broad life dimensions were represented in four SDF subscales: Work, Social, Health, and Leisure.

The SDF was constructed to contain 56 items, listing 40 self-management behavioral habits (e.g., attaining work goals), with the remainder being 10 filler items and six items to assess tendency to respond in a socially desirable manner. The respondents indicated their level of participation in a particular behavior on a five-point frequency scale. Participation level responses were used for the self-management scores. The respondents were also asked to evaluate whether their level of participation relative to each behavior contributed to good feelings, bad feelings, or neutral feelings about themselves. These responses constituted personal evaluation scores. Results were afforded in four self-management subscale scores, one Total self-management score, four personal evaluation subscale scores, and a Total personal evaluation score.

Reliability estimates were obtained with a student sample of primarily university graduate educational and counseling psychology students (N = 29). Students were tested at a two to three week interval without attention to scheduling times within the quarter. Test-retest reliability coefficients for self-management scores were sufficient for group comparisons but not as high as expected, i.e., .61

for Work, .72 for Social, .86 for Health, .76 for Leisure, and .82 for Total. It was believed that these estimates probably reflected the effect of escalating school demands as the quarter progressed.

In the preliminary validation findings, each subscale was found to be highly correlated (>.50) with Total self-management but not highly with any other subscale. The respondents' self-management scores were only moderately related to their personal evaluation scores. Frequent respondent questioning about the personal evaluation part of the inventory indicated a great deal of confusion regarding those instructions. Many respondents probably evaluated the behavior rather than their level of participation in the behavior and, thus, confounded their personal evaluation scores.

Comparisons of participants' self-ratings with ratings by significant others (spouses, roommates, co-workers) were very poor. Only the correlation on ratings of health behaviors was significant. These results were believed to have been influenced by the small sample size ($\underline{N}$ = 27) and by the significant others' lack of intimate knowledge of the respondents' behavior patterns.

Work self-management scores for diploma nursing school students were found to be correlated only modestly with their academic and clinical performance scores, i.e., .38 with academic performance and .32 with clinical performance. The very restricted ranges for the academic and clinical ratings--A's and B's with 81 as the lowest grade--were suspected to have minimized these correlations.

Patterns of subscale scores for high and low self-management scorers were, as expected, dramatically different. High scorers were respondents

with Total self-management scores at least one standard deviation above the mean; low scorers, those at least one standard deviation below the mean. The high scorers achieved a more optimum balance across the four major areas whereas the low scorers displayed very low Work and Health scores relative to Social and Leisure scores. The subscale means for high and low scorers are depicted graphically in Figure A-1, Appendix A.

Review Conclusions

The lifestyle assessment procedure offerred by Marlatt and colleagues may herald an essential ingredient in lifestyle self-management. Research and clinical evidence with their global lifestyle assessment supports the view that "self-management as lifestyle" is based in the day-to-day management of activities. The procedure does appear to measure a perhaps necessary end product of self-management. However, it does not appear broadly applicable across clinical and nonclinical populations nor easily implemented in a wide range of settings--neither of which is a claim the developers have ever made.

The cognitive processes assessed by the adult self-management instrument, Rosenbaum's SCS, are also worthy targets of assessment. However, they do not represent the behavioral end products of self-management processes which would indicate ultimate self-management effectiveness. In actuality, the children's rating scales do measure several, but only a limited number of, overt behavioral end products. Furthermore, the SCS is only at a preliminary validation stage.

Undoubtedly, the self-control assessment instruments and the lifestyle assessment procedure reviewed will serve valuable functions in the empirical exploration of self-management intervention and theoretical

model efficacy. However, in conclusion of this literature review, no validated procedure and only one newly developed instrument, the SDF, exist for the comprehensive assessment of adult self-management effectiveness.

If it can be determined that the SDF affords psychometrically sound measurement of behavioral end products, it would hold numerous advantages. The procedure of completing a self-report inventory would be economical and would not be as reactive as self-monitoring (Kendall & Williams, 1982). The SDF could access the many more and multidimensional behaviors involved in "self-management as lifestyle" (Karoly, 1981), whatever their frequency or noticeablity, and identify their response covariations. The SDF would measure those behaviors more naturalistically and, thus, help determine the ecological validity of self-management programs and interventions. By providing assessment feedback about problematic areas (Kendall & Williams, 1982), the SDF might support an individual's motivation to change or maintain targeted behaviors or lifestyle management characteristics. Thus, SDF assessment might attend to "the first and most critical target in a self-management program"--client motivation (Kanfer, 1980, p. 335). It could potentially be used to self-monitor pre-post self-management effectiveness changes and to inculcate the importance of a "self-management as lifestyle" perspective in change/maintenance efforts. Finally, the SDF would contribute to a workable psychology of self-management, particularly in terms of the validity of the construct, comprehensive self-management effectiveness.

CHAPTER II

METHODS

Instrument Development

The steps in initial development of the SDF, previously reported by Thomas, Williams, and Olsen (1982), will be described in terms of item selection, response format, scoring procedure, and method of handling falsification of responses. This description clarifies the instrument's basis in (a) logical, or rational, derivation and (b) a linear combination, or summative, model with test scores being obtained by summing scores over items (Nunnally, 1978).

Item Selection

An initial pool of 100 items was generated by educational and counseling psychology master's and doctoral student and faculty members of the Self-management Research Group at The University of Tennessee, Knoxville. Then, it was necessary to generate an additional 66 items to insure an adequate number for final item selection. Items included were to represent effective and ineffective behavioral habits relating to four broad life areas of self-management: work, health, social, and leisure. These four areas were chosen as the major realms of life functioning for most people.

The initial item pool was submitted to 45 mental health professionals having at least a master's degree in a mental health related area. Subsequently, the additional 66 items were submitted to 20 similar mental health professionals. Research group members recruited professionals for this reference group to represent all major therapeutic orientations and,

thus, to typify the diversity within the mental health profession. Represented orientations included cognitive-behavioral, behavioral, psychoanalytic, psychodynamic, Gestalt, rational emotive, and rational behavioral.

The professionals were asked to classify the items under the four primary categories--work, social, health, leisure, plus a miscellaneous category. The placement of an item into a category was determined by a majority agreement of the professional judges. The average agreement relative to the category placement of the items was .89; minimum agreement, .70.

The mental health professionals were also asked to evaluate whether regular participation in an item target activity indicated "effective living" or "ineffective living." At least 70% of the professionals had to agree for the item to be considered either indicative of effective self-management or ineffective self-management. With the exception of the leisure area, 10 items (five positive and five negative) drawing the greatest judge agreement in an area were chosen to comprise subscales[1] related to the different areas of self-management: Work, Social, and Health. The criterion 70% agreement level could be achieved only on positive items; therefore, the Leisure subscale was composed of 10 positive items. The average agreement regarding the direction (positive versus negative value) of the items included in the subscales was .87.

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[1]Of course, the use of the term "subscale" is premature at the SDF's preliminary stage of development. Therefore, "subscale(s)" in this document denotes the proposed subscale(s) and is used as a convenient term to facilitate communication.

Items in the various categories and their direction and subscale placement agreements appear in Table B-1, Appendix B.

The judgments were assumed to portray the professionals' views of healthy societal and "normal" individual values or standards regarding effective and ineffective self-management habits. The intent was to capture the valued behaviors of adjusted, personally free individuals who strive to be "in harmony" with the environment and with themselves.

The 16 items added to the 40 self-management items were filler and social desirability items (latter noted under Falsification of Responses below). The 10 filler items included "drinking coffee," "speaking softly," "going to bed early," "whistling," "yawning," "drinking tea," "crossing legs," "doodling on paper," "shifting feet," and "watching movies on TV." A guiding motive in item selection was to keep the total number of items small enough to encourage use in all types of settings, yet large enough to access a wide range of behaviors. The SDF is included in the sample packet of respondent forms in Appendix C (p. 151).

Response Format

The response format that was developed allowed each subject to indicate "Participation Level" for each item by circling a number from 0 to 4, representing one of the following categories: Never, Rarely, Periodically, Regularly, and Always. Definitions for these frequency categories are provided in the instructions for the SDF in Appendix C (p. 151). The participation level responses served as the basis for the self-management scores and may be considered to reflect the mental health profession's standards for the "normal" individual.

An additional evaluation was incorporated into the inventory to examine self-management from the participant's personal perspective or values. The instructions sought participant indication of whether his/her level of participation in a particular behavior contributed to good feelings, bad feelings, or neutral feelings about himself or herself. The relevant indication of personal evaluation was made by circling, respectively, a "+", "-", or "0" in the column labeled "Value" following the "Participation Level" columns. Noteworthy to this evaluation was the fact that the respondent was not asked to evaluate the behavior but rather to indicate feelings about his or her level of participation in the behavior. Thus, an individual might rarely engage in a behavior and yet "value" his/her participation level as "+." Inclusion of the personal evaluation dimension (quantified in personal evaluation scores) was hypothesized to access the personal values, or standards, of the respondents.

Scoring Procedure

The SDF self-management scores were attained by giving 0 (Never) to 4 (Always) weighting for the designated responses in the four subscales. For the Work, Social, and Health subscales, the weighting was added for positive items and subtracted for negative items. The score on each subscale was the positive total minus the negative total. Thus, the scores on each of these three subscales could have ranged from -20 to +20. Since the Leisure subscale was comprised totally of positive items, its total item credit was halved to make the score more comparable to the other subscale scores. The Leisure score's possible range was from 0 to +20. The Total self-management score was computed simply by totalling all

four subscale scores. The potential range of the Total scores was from -60 to +80.

The SDF personal evaluation scores were achieved by crediting three points for a "+" rating, two points for a "0" rating, and one point for a "-" rating. Since each subscale had 10 items, the personal evaluation subscale scores could have ranged from +10 to +30. The Total personal evaluation score was computed similarly to the Total self-management score--that is, by totalling all subscale scores--and, thus could have ranged from +40 to +120.

Falsification of Responses

Given the tendency of some subjects to represent their behaviors in an unduly positive light on a self-report inventory, two measures were taken to assess this possibility on the SDF. A social desirability scale was included, and comparison was made between self-ratings and ratings by a "significant other" to the respondent.

The social desirability scale was comprised of six behaviors in which most individuals seldom engage, i.e., "donating to all good causes," "aiding stranded motorists on the interstate," "eating only nutritious food," "helping anyone needing help," "exercising more than twice a day," and "stopping a mugging." The higher the score was on this scale, the greater the likelihood of falsification on the other inventory items. An average of 3 (Regularly) on these items--a social desirability total of 18--was considered indicative of falsification in self-reporting. Data from individuals scoring 18 or above on the social desirability scale were excluded from all analyses in the preliminary study (Thomas et al., 1982).

The second method utilized to evaluate the accuracy of the self-ratings involved their comparison with others' ratings of the participants. Some participants (N = 27) in the initial study agreed to have individuals who knew them well, "involved other persons" (such as, a spouse, roommate, or coworker), complete the inventory in terms of how the other perceived the participant's behavioral frequencies and personal evaluations. These "involved other persons" placed their ratings in sealed envelopes which were returned to the experimenters confidentially and never viewed by the participants.

Participants

The SDF was administered to 1,637 adults from diverse educational, professional, economic status, and geographic backgrounds. The samples for this study subsumed the initial investigation samples (Thomas et al., 1982) and included a few samples obtained in previous studies (Hector, 1984; Thomas, 1983). These numbers include all participants regardless of social desirability score or incomplete responding. Participants, all of whom were American except for the Nigerian sample (Hector, 1984), came from the following groups:

1. High-risk university freshmen and sophomores in a remedial program (N = 86).

2. University upperclassmen enrolled in adolescent psychology classes (N = 144).

3. Graduate students enrolled in educational and counseling psychology classes (N = 143).

4. State technical school students (N = 239) enrolled in "Applied Psychology," " Human Relations in Industry" (a psychology class),

electrical engineering, and surveying. All students were required to enroll in one of the two psychology classes; therefore, this group represents a broad sampling of state technical school students. Also, technical school students represent a diverse student population because they include high school, college, and advanced degree graduates hoping to increase their chances of obtaining a job.

5. Diploma nursing school second- and third-year students at St. Mary's School of Nursing, Knoxville (N = 80) (Thomas et al., 1982).

6. Undergraduate and graduate students seeking individual and group counseling services at The University of Tennessee Student Counseling Services Center (N = 179).

7. Undergraduate students enrolled in a study skills class at Carson Newman Community College, Jefferson City, Tennessee (N = 17).

8. Undergraduate students participating in a university Student Orientation Assistants (SOAs) program and selected from a large pool of applicants via a careful screening process which required applicant involvement in campus leadership and extracurricular activities, social skill performance in a group situation during the screening activities, and good grades (N = 43).

9. Alumnae of The University of Tennessee, a large state university (N = 134).

10. Guests at the 1982 World's Fair in Knoxville, Tennessee (N = 176) (Thomas, 1983).

11. Amateur track club members of the Oak Ridge Track Club and the Knoxville Track Club (N = 54).

12. Members of a family canoe recreation club, the Chota Canoe Club, Knoxville (N = 29).

13. General hospital nursing and laboratory technician employees at Park West Hospital, Knoxville (N = 20).

14. Professional occupation members (N = 53), primarily managerial--managers at Tennesse Valley Authority at Knoxville, members of the association of Knoxville Federally Employed Women (FEW), members of the Knoxville Association of Women Executives (KAWE), and a few KAWE male spouses (n = 3).

15. Teachers selected by virtue of their exceptional job performance and their acceptance of additional responsibilities for a Learning Styles Project (a city-wide school system research project) (N = 12).

16. Clerical and associate degree occupational workers (N = 45).

17. Patients in a general medical hospital, St. Mary's Hospital, Knoxville (N = 89) (Thomas, 1983).

18. Nigerian college students (N = 89) (Hector, 1984).

19. Additional nonremedial university freshmen and sophomores (N = 5).

Most participants (N = 1612) also completed a Demographic Survey form sampling such demographic variables as marital status, occupational classification, educational level, personal income level, age, and sex. A sample of this form is provided in Appendix C (p. 155).

Procedure

Most participants (N = 1085) were administered the SDF inventory and the Demographic Survey on a group basis by one attending investigator. The investigators included this researcher and other members of the Self-management Research Group. Initially the purpose of the study and

conditions of participation were verbally presented as delineated in the Informed Consent Statement(a) provided in Appendix C (p. 149). Informed Consent Statement(b) (also in Appendix C, p. 150) was used only with the state technical school electrical engineering and surveying classes sample. Voluntary participation, confidentiality of responses, and availability of feedback were stressed. Following participants' signing the Informed Consent Statements, verbal instructions analogous to the written instructions for both the SDF and Demographic Survey were given. A procedural change was introduced with most groups after the initial study samples. The experimenter verbally guided the participants through potential responses to the first behavior item, "drinking coffee" (actually a filler item). The example responses were given to clarify particularly the Value column response procedure because of the misinterpretation possibilities. With all groups, the researcher remained available for questions and monitoring.

Remaining participants ($\underline{N}$ = 552) completed the inventory on an individual basis at a time and setting of their choice and without an experimenter monitoring or fielding questions. A limited presentation included (a) the initial explanation of the study's purpose; (b) participation conditions; (c) general, not specific, guidance with the written instructions; and (d) instructions to use the same identification number on all forms, but to sign only the Informed Consent Statement.

Table D-1, Appendix D, summarizes (a) which samples in this and the initial study received group administration with and without the previously described guidance with the first behavior item and (b) which

samples were administered the SDF on an individual basis. Researchers and data collectors for each sample are also included in Table D-1.

Counseling center staff members, all of whom were Ph.D. or Ed.D. psychologists, and counseling psychology doctoral interns and practicum students were enlisted to provide the limited instructions to individual counseling center clients selected for participation in the study. The client was encouraged to complete the inventory in the center's reception area immediately following the first or second individual session with the counselor. Most elected this procedure rather than the alternative of completing it elsewhere and returning it later.

All counseling center clients were asked to complete two self-rating items in addition to the SDF and Demographic Survey. The first item was one adopted from the counseling center's Confidential Information Form which is completed by all new clients seeking services at the center. This item sought the clients' self-rating on a 0-to-10 point Extent of Difficulties scale from None to A Great Deal. The clients were asked to assess "interference with academic performance" by their presenting problems. The second item asked the clients to rate problem "interference with living effectively" (also on a 0-to-10 point scale). A sample of the Extent of Difficulties scale appears in Appendix C (p. 156).

Individual clients were recruited for participation in this study by the counselors. The basis for recruitment was the counselor's prediction from the intake session that the client's rating would be 5 or greater on at least one of the two items on the Extent of Difficulties scale. Prediction was necessary because this scale was completed after the intake session and at the same time as the SDF. Any counseling center group

members were included who agreed to participate in the study and who were members of an ongoing group of interest to this study during the time span from fall, 1982, through fall, 1984.

A variety of feedback methods were implemented. Any participant requesting feedback on results gave his or her name with an identification (ID) number only to one of the investigators. Counselors, group leaders, and class instructors never saw any individual's name paired with his or her ID number. The individual was delivered or mailed a scoring sheet with his or her item, subscale, and Total self-management scores computed and a "Guide to Self-Description Form Results." To insure confidentiality, the researcher included only the participant's ID number on these forms. An exemplary computed scoring sheet and two results guides are provided in Appendix E. The first guide was that distributed beginning in March, 1982, and based upon initial study results with 214 subjects (Thomas et al., 1982). A second guide was written and distributed beginning in January, 1984, after results were available from an increased sample size ($\underline{N}$ = 950).

Most respondents who received group administration participated in self-scoring their self-management inventory results. In a formal group presentation, the researcher would guide the self-scoring and present general information regarding test results analyzed thus far and implications of various scores and score patterns. This information followed similarly the content of the "Guide[s] to Self-Description Form Results" (See Appendix E). Informal question-and-answer periods were provided within the group presentation and on an individual basis immediately afterwards.

The terminology used in an assessment session to recruit ratings by significant others was changed to seek others who were "intimately [stressed] involved on a day-to-day" basis with the respondent. The original instructions asked the participant to have individuals "who know you well, involved other persons (such as, a spouse, roommate, or coworker)" to complete the other-rating. The other change for this study was provision of an envelope labelled "Involved Other Person" and an instruction sheet constructed specifically for the other-rater. See Appendix F for a sample of that instruction sheet. These changes in procedure were implemented after the preliminary findings reported by Thomas et al. (1982) indicated unexpectedly low correlations between other- and self-ratings.

Descriptive Statistics

Total and subscale scores were described by mean, standard deviation, mode, median, and range for each sample and the total data pool (N = 1512). Self-management means were also examined in distributions based on the following demographic groupings: age; sex; educational level; marital, occupational, student status, health, and socioeconomic status; religious involvement; and number of visits to the physician (in the past year) and of hospitalizations (within the past five years). The Demographic Survey soliciting this demographic information is available in Appendix C (p. 155).

Reliability

Stability of SDF scores was assessed by obtaining test-retest reliability coefficients (Anastasi, 1976; Nunnally, 1970) for five samples

which differed by occupational and student status. The student samples included graduate educational and counseling psychology students ($\underline{N}$ = 110), university upperclassmen ($\underline{N}$ = 13), and state technical school students ($\underline{N}$ = 59). The nonstudent samples included canoe club members ($\underline{N}$ = 29) and general hospital laboratory technician and nursing staff employees ($\underline{N}$ = 20). All were administered the SDF on two separate occasions, two to three weeks apart. The students' test administrations were scheduled near the mid-point or the very beginning of their academic quarter. This scheduling was implemented to avoid the substantially different academic conditions which typically prevailed in the transition from the beginning of the quarter into the midpoint or from the midpoint into the end of the quarter. It was expected that this attention to scheduling within the quarter would improve the stability of student sample reliability estimates as compared to those found by Thomas et al. in 1982. Testings of the nonstudent groups were scheduled in the spring to avoid the atypical variability of schedules caused by Christmas and summer vacations.

The standard error of measurement (Anastasi, 1976; Nunnally, 1978) was computed on each subscale's scores and the Total scale scores. These computations were made for the combined student samples and the combined nonstudent samples.

Another method of examining test-retest reliability was by determining the extent to which an individual's high and low self-management subscale scores remained consistent from test to retest. The binomial distribution (Hays, 1973) was used to compare the proportion of pre- and post-matches on highest and lowest subscale scores. The

somewhat nonequivalent Leisure scores were not included in this analysis because they may have been inflated by that subscale's totally positive item composition.

Interitem consistency reliability was examined by Cronbach's (1951) coefficient alpha method. This method is considered to be the most useful in examining internal consistency (Nunnally, 1970).

Validation

Construct Validity

Construct validity was addressed by methods of internal consistency, individual item analyses, correlations with related respondent measures, and factor analysis (Anastasi, 1976; Nunnally, 1978).

Internal consistency analyses. By the first method of internal consistency, interrelationships of subscale scores and Total self-management scores were determined by computing Pearson product-moment (PPM) correlations. The subscale scores were expected to be only moderately correlated to each other and highly correlated with the Total scale, thus indicating their measurement of largely different domains of self-management.

In the second internal consistency method, by a contrasted group method adaptation, responses of an upper criterion group were compared to responses of a lower criterion group. Patterns of subscale score means for the upper criterion group, "effective self-managers," were graphically compared to those of the lower criterion group, "ineffective self-managers," in terms of balance or imbalance. The effective self-managers (n = 223) included subjects who attained a Total

self-management score at least one standard deviation above the mean of the total data pool (N = 1512); the ineffective self-managers (n = 237), subjects who scored at least one standard deviation below the mean.

Individual item analyses. Individual item analyses were conducted as another method of examining what the instrument measures. The contributions of the individual items to the various subscales and to the Total self-management score were evaluated by item intercorrelations (PPM) with subscale and Total scores. Nunnally (1970) and Henrysson (1971) have recommended that product moment correlations give essentially the same information as any other measure of item-total scale relationship, e.g., examination of percentages of persons in top and bottom groups "passing" an item. These correlations indicate an item's discriminating power, i.e., extent to which an item discriminates between high and low scores (Henrysson, 1971). It was expected that each item would be most correlated and in the expected direction of the item's value (positive or negative) with the subscale of its placement and would contribute to a lesser extent to the Total score.

A second item analysis involved examination of corrected item-subscale and item-total scale correlations (Henrysson, 1971). The correction formula (Statistical Analysis System, Inc., 1982) gave the correlation between an item and the subscale and the Total scale scores based upon the sum of the other remaining, n-1, items in the test of n items. This formula was used to eliminate spuriously high item-to-scale correlation coefficients. Spurious results can occur because an item is also part of the scale and the item score enters into both variables,

i.e., the item score and the scale score used in computing the correlation coefficient.

Statistical properties of each item were examined in combination as a third item analysis and as circumstantial evidence of content validity (Henrysson, 1971; Nunnally, 1978). These statistical properties included frequency distributions of responses to the items, item omissions, and the corrected item-subscale and item-total scale correlations. Power to discriminate well between poor and good scores (as indicated in the item-scale correlations) and a moderate spread in the frequency distributions of responses to items were expected (Anastasi, 1976; Henrysson, 1971; Nunnally, 1978).

The fourth item analysis involved review of verbal and written feedback about individual items and the SDF, in general. These data were also used to examine the SDF's face validity. Informal verbal and written evaluations of the inventory and its items were sought and offerred (unsolicited) from groups of respondents and from the counseling center staff who assisted in conducting the study. Written evaluations of the SDF and of the group presentation within which the SDF was administered were made by many of the alumnae participants. These comments were solicited in a formal evaluation of the women's continuing education workshop of which the SDF group presentation was one of three presentations.

Correlations with related respondent measures. Correlations with related respondent measures included relationships (PPM correlations) between subscale and Total self-management scores and personal evaluation scores. Correlations of respondents who received detailed, clear verbal

instructions for the Value column rating with an example (N = 724) were separated from correlations of those who did not (N = 649). Self-management theory suggests that a moderate relationship should exist between a respondent's self-management effectiveness and personal satisfaction with his or her self-management activities (Williams & Long, 1983). That relationship was expected to be stronger for respondents who received the special instructions regarding the Value column rating. The self-management scores should not be totally dissimilar to the personal evaluation scores but should measure something beyond personal perceptions. As noted previously, self-management scores might be considered as measurement against mental health professional standards; and personal evaluation scores, measurement against personal standards.

Additionally, PPM correlations of self-management Total scores and subscale scores of university counseling center clients with their ratings of "interference with academic performance" (N = 168) and "interference with living effectively" (N = 129) by their presenting problems were examined. Self-management scores were expected to be negatively correlated with Extent of Difficulties ratings, particularly Work self-management with problem interference in academic activity and Total self-management with problem interference in living effectively.

Factor analysis. Preliminary evaluations of the data for all American subjects were made prior to the factor analytic procedures. The R correlation matrix (listwise correlations between all 56 items, including 10 filler and six social desirability items, N = 1250) produced by the data indicated that it was factorable in that it included several sizeable correlations in excess of .30 (Tabachnick & Fidell, 1983;

Nunnally, 1978). Most correlations were between .10 and .30 as would be expected with such a large sample size (Tabachnick & Fidell, 1983).

Linearity among pairs of items was assessed through examination of bivariate scatterplots of those with correlation coefficients less than .15. The scatterplots revealed absence of any nonlinearity. Also there was no evidence of multicollinearity in the data set, i.e., no correlations in excess of .80. No further investigation regarding multicollinearity was made because, according to Tabachnick & Fidell (1983), this is not a problem within principal components factor analysis.

To select items for inclusion in the factor analysis, the researcher examined the results of the Cronbach's a procedures (See p. 73). The initial procedures were performed on the 40 self-management items, excluding the 10 filler and six social desirability items. Nunnally (1978) has recommended that total scale reliability estimates should be between .50 and .60 to retain a scale confidently as a source for selection of items. From the previous item analysis, the a coefficient for the Total scale was .67, thus surpassing Nunnally's criterion. However, no items correlated with the Total scale at or greater than .40 as Nunnally has also recommended for inclusion in factor analytic procedures (See pp. 71-73 for the corrected item-total scale correlations with 40 self-management items). The a coefficient was improved to .71 with deletion of items with corrected item-total a correlations of less than .20. Because of the improvement in Total-scale internal consistency reliability, those 17 items were excluded from the factor analysis. The 23 items retained were those self-management items which are listed with their corrected item-scale correlations on pp. 71-73.

All cases with missing data on the 23 self-management items were deleted (N = 161) by the computerized statistical procedure (SAS, Inc., 1982) used in the actual factor analysis, thus preventing any problems in this area. The sample size (N = 1390) was large enough to make sampling error minimal and correlation coefficients reliably estimated (Comrey, 1973; Nunnally, 1978). The sample size for the correlation matrix was smaller than for the factor analysis because the listwise correlations deleted every observation with any missing data on any of the 56 items. Fewer deletions were made for missing data on only the 23 self-management items included in the factor analysis.

A principal components solution was carried out using Statistical Analysis System (SAS Institute, Inc., 1982) on the remaining 23 items for all American subjects (N = 1390). Varimax orthogonal rotation, the most commonly used, was then performed to maximize the variance of the factor loadings for each factor by making the high loadings higher and the low ones lower (Nunnally, 1978; Tabachnick & Fidell, 1983). As recommended (Kaiser & Rice, 1974; Nunnally, 1978; Tabachnick & Fidell, 1983), only those factors with initial eigenvalues greater than 1.00 were rotated.

Content and Face Validity

Content validity was established during the development of the instrument by requiring a high degree of consensus among the mental health professionals regarding the placement and direction of the questionnaire items. The diverse membership of this reference group was sought to underpin content validity further. As Nunnally (1978) and Henrysson (1971) have stressed, content validity is determined primarily by the "plan of content and the plan for construction of items" (Nunnally, 1978,

p. 111) as judged by experts and before the actual completion of test construction.

Additionally, the statistical properties of each SDF item were examined as circumstantial, rather than primary, evidence of content validity (Henrysson, 1971; Nunnally, 1978). As described previously (under Individual item analyses, p. 38), this evidence was used also in the item analyses.

Face validity, actually one aspect of content validity (Cronbach, 1970; Nunnally, 1978), was evaluated by examination of (a) the written and verbal feedback regarding the SDF from respondents and counseling center staff and (b) the process of administering and completing the questionnaire, as observed by the experimenters. The feedback data were also utilized in the item analyses. Examination was focused upon whether the SDF "looked valid" to the respondents and those who administered it (Anastasi, 1976).

Concurrent Validity

Contrasted groups method. One method of establishing concurrent and further construct validity was by comparisons of scores of contrasted groups (contrasted groups method) (Anastasi, 1976). Groups presumed to be "good self-managers" included the following:

1. The Student Orientation Assistants (SOAs) because of their selection via stringent screening criteria as previously noted (N = 43).

2. Amateur track club members by virtue of their active interest in maintaining a healthful lifestyle by group-supported efforts to incorporate jogging/running regularly into their lives (N = 53).

Contrasting groups presumed to be "poor self-managers" included the following "distressed" university students seeking individual and group counseling services at a university counseling center:

1. Individual clients (N = 31).
2. "Overcoming Student Stress" group members (N = 27).
3. "How to Study" group members (N = 41).
4. "Assertiveness Training Workshop" members (N = 24).

"Distressed" individual and group member clients included those who indicated a distress scale self-rating of 5 or above in terms of either problem "interference with academic performance" or problem "interference with living effectively."

By this contrasted groups method, comparisons of Total self-management scores and of self-management subscale scores among all six contrasted groups were made using one-way analyses of variance. An a level of .005 was used with each one-way ANOVA to insure significance of findings with the multiple comparisons being made. Follow-up analyses were conducted with the Tukey Studentized Range Test.

In a modification of contrasted groups method, comparison of all groups was examined for evidence of an expected trend in self-management effectiveness. A trend of increasing self-management effectiveness, as reflected in increasing mean scores, was expected across groups collapsed in terms of their presumed self-management effectiveness. The composition of the three groups, "poor," "average," and "good self-managers" is delineated in Table 1. Placement in a particular group was determined by outstanding career or extra-career involvement ("good self-managers") versus presentation of emotional, social, physical, or educational

difficulties ("poor self-managers"). All samples not fitting into one of these categories at either end of a self-management continuum were collapsed into "average self-managers." The subscale and Total scale means of the three self-management groups were compared using one-way ANOVAs. An a level of .005 was again used to insure significance of findings with the multiple comparisons being made. Follow-up analyses used the Tukey Studentized Range Test.

Table 1

Projected Poor, Average, and Good Self-managers

Group	n	Composition
Poor Self-managers	354	College freshmen/sophomores in remedial program, counseling center clients, general hospital patients, community college study skills class.
Average Self-managers	690	All other groups not listed as either poor or good self-managers.
Good Self-managers	468	Track clubs, SOAs, Learning Styles Project teachers, graduate students, TVA managers, FEW, KAWE and spouses, university alumnae, canoe club.

Correlations with ratings by others. Another method of determining SDF concurrent validity was by correlations with the ratings by others (Anastasi, 1976). First, PPM correlation comparisons of the respondents' self-ratings with ratings by significant others of the respondents'

behaviors were made. This method followed that used in the initial study except that the groups ($\underline{N}$ = 75) received the more "intimate" definition of the other, the other's instruction sheet, and the labelled envelope to be sealed for return.

A second SDF correlation with ratings by others involved comparisons of Work self-management scores of technical school students with performance ratings of them made by their instructors. The performance ratings were surveying or electrical engineering lab grades, rather than lecture grades, which were given past mid-quarter. The ratings were based on direct observation of the student's technical performance behavioral habits.

A third comparison with ratings by others was made with a SOA group ($\underline{N}$ = 22). The SOAs were instructed to complete the SDF Work and Social items (i.e., "behaviors you engage in a social situation and in work or school-related functions") in terms of their SOA functions only. Their university staff supervisor rated SOAs in terms of their SOA functions on only the Work and Social items of the SDF. The supervisor's rating form was an adaptation of the SDF, and a sample copy is located in Appendix G. Self- and supervisor-ratings were obtained at the end of the SOAs' first week in their actual SOA role, i.e., after completion of their training. PPM correlations between the supervisor- and self-rated Social and Work subscale scores were then examined.

Difficulties often exist in assessing the occurrence of social behaviors because of the situational specificity of their occurrence (Bellack, 1979; Kazdin, 1979; Mischel, 1968, 1971). Limiting the definition of the social situation for the SOAs and their supervisor was

expected to assist in evaluation of whether such difficulties occurred with the Social subscale.

CHAPTER III

RESULTS

Descriptive Statistics

Self-management Scores

The means for the various participant groups are provided in Table 2. Because the Nigerian group means were substantially out of line with the American group means, the Nigerian scores were not included in the reliability and validity analyses reported in this study. Of the American students, the graduate students obtained the highest pattern of scores; of the nonstudents, the track clubs and the canoe club obtained the highest, primarily by their high Health subscale scores. With the exception of the Social subscale, the hospital patients obtained the lowest pattern of scores for all groups. The Health subscale mean of the latter group was much lower than the Health means for all other groups. Among the student groups, the counseling center individual clients exhibited the lowest pattern of scores. The Work subscale means for the "emotionally distressed" respondents, the individual clients and the general hospital psychiatric patients, were comparable and the lowest of all groups. Descriptive statistics on self-management scores, including standard deviation, median, mode, and range for all samples are provided in Table H-1, Appendix H.

Table 3 provides an overview of the distribution of self-management scale scores. The means, 25th and 50th percentile scores, and lowest scores for the Social and Leisure subscales are considerably higher than the similar measures for the Work and Health subscales. The distributions

Table 2

Subscale and Total Self-management Means for Participating Groups
(N = 1600)

Group	n	Scale Scores: Work	Social	Health	Leisure	Total
Student Samples						
1. College Freshmen and Sophomores in Remedial Program	84	2.80	7.07	3.75	8.61	22.23
2. Upperclassmen	136	4.03	5.82	4.55	8.76	23.17
3. Graduate Students	142	5.74	7.15	4.68	8.56	26.13
4. University Counseling Center Clients Combined	176	2.81	5.59	3.75	8.20	20.34
-Individual Clients	38	1.61	5.53	4.55	8.28	19.96
-How to Study Group Clients	61	3.05	5.98	3.57	8.61	21.22
-Overcoming Student Stress Group Clients	39	3.41	5.00	3.90	7.87	20.18
-Assertiveness Training Group Clients	38	3.03	5.61	3.08	7.78	19.49
5. University Student Orientation Assistants	43	4.12	6.14	2.07	8.94	21.27
6. Community College Study Skills Class Participants	17	2.65	6.82	4.53	8.91	22.91
7. State Technical School Students	236	3.25	6.33	2.78	8.38	20.75
8. Nursing School Students	79	4.51	6.54	3.53	8.12	22.70
9. Nigerian Students	88	7.20	8.46	7.76	10.10	33.53
Nonstudent Samples						
1. University Alumnae	133	3.93	5.92	4.65	8.46	22.97
2. World's Fair Visitors	170	3.79	6.22	4.89	7.66	22.55
3. Amateur Track Club Members Combined	53	3.57	6.38	8.09	8.18	26.22
-Knoxville Track Club	16	4.06	6.94	8.69	8.81	28.50
-Oak Ridge Track Club	37	3.35	6.14	7.84	7.91	25.23

Table 2 (Continued)

Group	n	Scale Scores: Work	Social	Health	Leisure	Total
4. Canoe Club Members	29	3.24	6.03	7.48	7.53	24.29
5. General Hospital Employees	19	5.95	5.53	3.63	8.42	23.53
6. TVA Managers	16	5.06	6.56	4.25	7.88	23.75
7. Knoxville Assoc. for Women Executives	23	5.48	7.48	4.30	8.24	25.50
8. Federally Employed Women Organization	14	4.57	6.07	5.21	8.29	24.14
9. Learning Styles Project Teachers	12	5.17	7.33	2.25	7.88	22.63
10. General Population	45	3.60	5.56	3.71	7.61	20.48
11. Medical Hospital Patients Combined	77	2.23	8.86	1.42	6.15	18.66
-Physical Patients	58	2.57	8.88	1.52	5.85	18.82
-Psychiatric Patients	19	1.21	8.79	1.11	7.05	18.16
Additional Samples						
1. Additional Nonremedial Freshmen and Sophomores	5	5.20	4.40	2.20	8.30	20.10
2. KAWE Spouses	3	3.67	8.00	9.33	7.83	28.83

Table 3

Subscale and Total Self-management Distributions (N = 1512)

	Statistic	Scale Raw Scores				
		Work	Social	Health	Leisure	Total
1.	Possible range of scores	-20 to +20	-20 to +20	-20 to +20	0 to +20	-60 to +80
2.	Mean	3.77	6.39	4.04	8.18	22.39
3.	Mode	4.00	7.00	5.00	7.50	22.50
4.	SD	3.79	3.14	4.30	2.50	8.70
5.	Highest Score	15.00	17.00	18.00	18.00	56.00
6.	75th Percentile	6.00	8.00	7.00	9.50	28.00
7.	50th Percentile	4.00	6.00	4.00	8.00	22.50
8.	25th Percentile	2.00	4.00	1.00	6.50	17.00
9.	Lowest Score	-12.00	-5.00	-16.00	0.00	-12.00

for Social and Leisure are also more homogeneous than the distributions for Work and Health. The Health subscale produced a particularly wide range of scores, with the actual range closely approximating the possible range.

The skewness of the score distributions was examined by applying Kurtz and Mayo's measure of skewness (1979). The distribution of Work scores was found to be significantly negatively skewed; and the distributions of Social, Health, and Leisure scores, significantly positively skewed. The distribution of Total scores evidenced no significant departure from symmetry.

Personal Evaluation Scores

Mean personal evaluation subscale and Total scale scores evidenced only slight variation among samples and subscales. Those mean scores for each participating group are presented in Table 4. The total N reflects the exclusion of results from 180 out of 1637 inventories due to subjects' omitting more than three Value column ratings or having a social desirability score of 18 or more.

Although personal evaluation mean scores showed little variation, a few patterns are of interest. The lowest patterns of scores were again evidenced with the "emotionally distressed" respondents, i.e., the individual counseling center clients and the general hospital psychiatric patients. The highest pattern was displayed by the TVA managers and the Nigerian students. However, neither set of personal evaluation scores was out of line with that of other samples, as were the self-management scores of the Nigerian students. The highest Work personal evaluation mean scores were obtained by the TVA managers; the lowest, by the individual

Table 4

Subscale and Total Personal Evaluation Means for Participating Groups (N = 1457)

Group	n	Scale Scores				
		Work	Social	Health	Leisure	Total
Student Samples						
1. College Freshmen and Sophomores in Remedial Program	78	21.13	23.33	21.72	23.79	89.97
2. Upperclassmen	133	22.49	22.65	21.55	23.42	90.11
3. Graduate Students	137	22.68	22.50	21.18	24.07	90.43
4. University Counseling Center Clients Combined	167	20.45	21.40	21.09	23.31	86.24
-Individual Clients	35	19.31	20.63	20.43	22.83	83.20
-How to Study Group Clients	60	21.00	22.25	21.45	23.38	88.08
-Overcoming Student Stress Group Clients	36	20.53	21.06	21.50	23.11	86.19
-Assertiveness Training Group Clients	36	20.56	21.06	20.72	23.83	86.17
5. University Student Orientation Assistants	42	21.74	22.05	20.81	23.52	88.12
6. Community College Study Skills Class Participants	17	20.82	22.59	21.41	24.71	89.53
7. State Technical School Students	227	21.46	22.55	20.84	23.26	88.11
8. Nursing School Students	62	22.81	22.81	21.47	23.55	90.63
9. Nigerian Students	88	22.83	23.63	22.59	24.72	93.76
Nonstudent Samples						
1. University Alumnae	128	21.04	21.80	21.65	23.86	88.34
2. World's Fair Visitors	131	21.38	21.49	21.38	23.97	88.22
3. Amateur Track Club Members Combined	47	21.26	21.32	23.51	23.30	89.38
-Knoxville Track Club	10	21.10	21.30	22.80	23.60	88.80
-Oak Ridge Track Club	37	21.30	21.32	23.70	23.22	89.54

Table 4 (Continued)

	Group	n	Scale Scores: Work	Social	Health	Leisure	Total
4.	Canoe Club Members	28	20.79	21.71	23.11	24.21	89.82
5.	General Hospital Employees	18	22.11	20.50	19.94	23.78	86.33
6.	TVA Managers	15	23.67	22.73	22.13	23.53	92.07
7.	Knoxville Assoc. for Women Executives	21	22.67	22.05	21.43	23.90	90.05
8.	Federally Employed Women Organization	13	22.23	21.23	21.46	25.08	90.00
9.	Learning Styles Project Teachers	12	21.75	22.75	19.83	22.17	86.50
10.	General Population	44	21.27	22.00	20.93	22.27	86.48
11.	Medical Hospital Patients Combined	44	21.34	21.86	20.05	23.36	86.61
	-Physical Patients	35	21.51	21.40	19.97	23.20	86.09
	-Psychiatric Patients	9	20.67	23.67	20.33	24.00	88.67
	Additional Sample						
1.	Nonremedial Freshmen and Sophomores	5	22.20	20.20	21.00	24.20	87.60

counseling center clients. General hospital employees, Nigerian students, and remedial program freshmen and sophomores attained the highest Social scores. Personal satisfaction with health behavior participation, as evidenced in Health personal evaluation scores, was highest for one of the track clubs and the canoe club members. Interestingly, Health scores were as low for the Learning Style Project teachers and general hospital employees as for the general hospital physical patients. With the highest being attained by the Federally Employed Women's organization, Leisure personal evaluation scores tended overall to be the highest subscale score, consistent with the self-management Leisure subscale scores.

Because of the lack of variation in personal evaluation scores, the overview of the distribution of personal evaluation scale scores provided in Table 5 can be considered representative of all samples. These total sample means, as well as the individual sample means, reflect an essentially neutral affect score in each area. Although respondents reported contribution both to positive feelings about self by their level of involvement in certain behaviors and to negative feelings as related to other behaviors, these positive and negative feelings tended to cancel each other out. How much this net neutral affect is related to the difficulty some respondents had with the Value column responses is unclear. No further descriptive statistics were sought with personal evaluation scores because of that continued difficulty. Discussion of the difficulty with the Value column rating is included in the sections on Correlations with related respondent measures (p. 84) and Content and Face Validity (p. 86).

Table 5

Subscale and Total Personal Evaluation Distributions (N = 1370)

Statistic	Scale Raw Scores				
	Work	Social	Health	Leisure	Total
1. Possible range of scores	+10 to +30	+10 to +30	+10 to +30	+10 to +30	+40 to +120
2. Mean	21.59	22.13	21.31	23.58	88.61
3. Mode	21.00	22.00	22.00	24.00	88.00
4. SD	3.39	2.86	3.20	3.53	8.59
5. Highest Score	30.00	30.00	30.00	33.00	118.00
6. 75th Percentile	24.00	24.00	23.00	26.00	94.00
7. 50th Percentile	22.00	22.00	21.00	24.00	89.00
8. 25th Percentile	20.00	20.00	19.00	21.00	83.00
9. Lowest Score	9.00	11.00	11.00	12.00	51.00

Demographic Groupings

Descriptive statistics for groupings by various demographic variables revealed several noteworthy differences in patterns of self-management scores. Total and subscale self-management score means for the various demographic groupings are presented in Table 6.

Self-management effectiveness tended to increase in all areas with age up to 40 years of age (excluding the combined >35 category) and within all areas except Work (which dropped) in the 41 to 45 year-old age bracket. Then with increasing years (up to 55), Social, Health, and Leisure self-management effectiveness decreased. Consistent with results obtained in other self-management surveys cited in the literature review, females obtained slightly higher scores across subscales than males. Discounting the widowed due to the small n, the experimenter found that being married tended to result in higher scores except in Leisure self-management. A trend of increasing self-management can be seen in the Work and Health areas, but not in Social or Leisure, with increasing student and educational level attainment. The lowest scores across all demographic groupings were obtained by those with less than a high school education (except in Social self-management).

Among the various occupational classifications, unskilled workers had the lowest pattern of scores overall; professional workers, the highest. The very low Work scores for both unskilled workers and homemakers may reflect that the SDF Work behavior items either were not worded so that the behavior would be seen as relevant or failed to sample those occupations' work behaviors adequately. Reported health status did make a difference in both the Work and Health scores and in the expected

Table 6

Self-management Means for Various Demographic Groupings

Classification	Scale Scores				
	Work	Social	Health	Leisure	Total
Sex					
Females (n = 945)	4.01	6.49	4.14	8.37	23.01
Males (n = 534)	3.35	6.24	3.90	7.87	21.36
Marital Status					
Never married (n = 701)	3.49	6.07	3.61	8.50	21.66
Married (n = 599)	4.11	6.64	4.68	7.85	23.28
Divorced/separated (n = 159)	3.82	6.91	3.45	8.03	22.21
Widowed (n = 12)	3.83	6.50	4.50	9.50	24.33
Age Level[a] Based on five groups only					
13-18 (n = 99)	2.39	6.06	3.24	8.95	20.65
19-24 (n = 515)	3.58	6.20	3.59	8.59	21.97
25-30 (n = 200)	4.08	6.31	3.97	7.99	22.34
31-35 (n = 156)	4.58	6.33	4.53	8.20	23.64
>35 (n = 456)	3.85	6.79	4.63	7.63	22.89
With > 35 broken down					
36-40 (n = 56)	4.48	6.64	5.77	7.79	24.68
41-45 (n = 34)	3.97	7.06	5.74	8.26	25.03
46-55 (n = 33)	4.03	6.42	5.27	7.26	22.98
56-65 (n = 4)	4.00	9.00	10.00	8.38	31.38
>65 (n = 3)	3.33	9.00	5.33	5.50	23.17
Occupational Classification					
Sales (n = 100)	2.89	6.32	3.51	8.58	21.30
Unskilled (n = 146)	1.68	6.09	2.57	7.65	18.00
Skilled (n = 119)	3.66	6.47	3.16	7.96	21.26
Supervisory (n = 47)	4.15	6.13	4.53	8.30	23.11
Managerial (n = 127)	4.71	6.43	4.23	7.80	23.16
Professional (n = 414)	4.88	6.52	4.76	8.26	24.41
Clerical (n = 102)	4.08	6.46	4.53	8.18	23.25
Homemaker (n = 72)	2.04	6.86	5.19	8.41	22.51
Military (n = 8)	5.00	7.88	1.50	7.50	21.88

Table 6 (Continued)

Classification	Scale Scores				
	Work	Social	Health	Leisure	Total
Educational Level					
Below High School (n = 20)	.60	7.75	-1.20	5.48	12.63
High School Graduate (or GED) (n = 745)	3.29	6.34	3.49	8.18	21.29
Technical/vocational School (n = 169)	3.77	6.36	3.28	8.21	21.62
BS/BA College Graduate (n = 355)	4.39	6.50	4.86	8.29	24.05
MS/MA Degree (n = 141)	5.01	6.35	5.66	8.35	25.38
Ed.D/Ph.D./M.D./J.D. Degree (n = 35)	5.11	6.37	7.74	8.19	27.41
Student Status					
Not a student (n = 261)	3.78	5.85	5.08	8.04	22.74
High school (n = 3)	6.00	7.33	8.67	8.17	30.17
Technical/vocational school (n = 130)	3.57	6.49	2.94	8.41	21.41
College freshman/ sophomore (n = 204)	3.09	6.23	3.21	8.49	21.01
College junior/senior (n = 199)	3.89	5.98	4.06	8.45	22.38
Graduate/professional school (n = 211)	5.19	6.93	4.76	8.40	25.28
Employment Status					
Not currently employed (n = 470)	3.20	6.48	3.87	8.46	22.00
Employed fulltime (n = 553)	4.33	6.44	4.10	7.82	22.68
Employed parttime (n = 427)	3.67	6.13	4.04	8.38	22.22
Retired (n = 6)	4.67	8.50	6.83	8.58	28.58
Unemployed by Student Status					
Not a student (n = 40)	2.38	6.30	5.18	8.78	22.63
High school (n = 1)	-1.00	6.00	11.00	9.50	25.50

Table 6 (Continued)

Classification	Scale Scores				
	Work	Social	Health	Leisure	Total
Technical/vocational school (n = 40)	3.45	6.05	2.23	8.36	20.09
College freshman/ sophomore (n = 113)	2.74	6.05	3.20	8.65	20.65
College junior/senior (n = 76)	3.76	6.29	4.25	8.03	22.34
Graduate/professional school (n = 70)	4.87	7.16	4.89	8.89	25.80
Fully Employed by Student Status					
Not a student (n = 186)	4.11	5.76	4.87	7.92	22.66
High school (n = 0)					
Technical/vocational school (n = 38)	3.61	5.87	3.00	8.18	20.66
College freshman/ sophomore (n = 12)	4.17	6.50	2.08	6.50	19.25
College junior/senior (n = 22)	5.18	6.59	3.27	9.45	24.50
Graduate/professional school (n = 85)	6.00	7.02	4.67	8.19	25.88
Parttime Employed by Student Status					
Not a student (n = 31)	3.71	5.81	6.10	7.89	23.50
High school (n = 2)	9.50	8.00	7.50	7.50	32.50
Technical/vocational school (n = 51)	3.57	7.24	3.39	8.60	22.79
College freshman/ sophomore (n = 66)	3.30	6.09	3.02	8.69	21.10
College junior/senior (n = 97)	3.63	5.45	3.98	8.53	21.59
Graduate/professional school (n = 56)	4.36	6.52	4.75	8.10	23.72
Income Level					
$5000 or less (n = 609)	3.43	6.26	3.66	8.44	21.79
$5001-10,000 (n = 218)	3.79	6.41	3.40	8.20	21.80
$10,001-15,000 (n = 150)	4.71	6.84	3.99	7.93	23.47
$15,001-25,000 (n = 210)	3.94	6.36	4.13	7.80	22.22
>$25,000 (n = 218)	4.28	6.45	5.44	7.93	24.10

Table 6 (Continued)

Classification	Scale Scores				
	Work	Social	Health	Leisure	Total
Visits to Physician in Past Year					
0 (n = 176)	4.22	6.17	4.31	7.99	22.68
1-3 (n = 611)	4.03	6.28	4.31	8.35	22.96
3-5 (n = 105)	3.48	6.32	3.87	8.82	22.49
>5 (n = 85)	3.47	6.01	2.54	8.25	20.28
Number of Hospitalizations in Past Five Years					
0 (n = 622)	4.02	6.32	4.53	8.39	23.26
1-4 (n = 347)	3.85	6.10	3.38	8.24	21.57
5-10 (n = 8)	2.38	7.00	1.38	8.63	19.38
>10 (n = 1)	2.00	7.00	3.00	5.50	17.50
Reported Health Status					
Excellent (n = 597)	4.33	6.47	5.17	8.57	24.54
Good (n = 530)	3.47	5.93	3.11	8.24	20.75
Fair (n = 56)	2.27	5.96	0.86	8.07	17.16
Poor (n = 7)	3.71	7.43	3.29	6.50	20.93
Religious Beliefs					
No belief in a higher power (n = 55)	3.07	6.11	4.36	8.08	21.63
Belief in a higher power (n = 433)	3.73	6.29	3.55	7.94	21.52
Belief and some institutional involvement (n = 423)	3.81	6.18	3.83	8.32	22.13
Belief and regular institutional involvement (n = 546)	3.86	6.65	4.47	8.32	23.29

[a]Part of the participants completed a demographic survey which broke age down into only five categories. The other participants completed a survey which sought the participant's chronological age.

direction, i.e., with self-management effectiveness increasing with better health status (excluding the poor grouping due to small n). Other demographic groupings displayed patterns of scores which were either remarkably similar, e.g., by income level and by religious beliefs, or unclear because of many small sample sizes.

Falsification of Responses

The composite mean for the six social desirability items was 8.54, portraying slightly more than a "rarely" response to each item. The standard deviation of social desirability scores was 2.77; 68% of the sample had a composite social desirability score between 5.77 and 11.31. Although these social desirability scores ranged from 0 up to 21, only .005% of this study's sample (7 out of 1519 participants) scored at or above the 18 criterion level. Data from those individuals scoring at or above the criterion level on the social desirability scale were excluded from all analyses, with the exception of the uncorrected item-scale correlations.

Relationships between participants' self-descriptions and others' descriptions were much lower than anticipated, as they were in the initial study (for presentation as related to concurrent validation, see Correlations with ratings by others, p. 94). However, with the exception of the Leisure subscale (noted by Thomas et al., in 1982, to be probably the least value laden of the subscales), the "significant other" scores were higher than the self-scores in both studies. This finding suggests that participants were not unduly inflating their scores. The scale score means and PPM correlations of the self- and other-ratings can be found in Table 7.

Table 7

Relationship of Self-management Scores with Ratings by Significant Others

Statistic	Work	Social	Health	Leisure	Total
Sample without Special Instructions[a] (n = 41)					
Correlation	.294	-.037	.783	.487	.328
Probability	.0620	.8160	.0001	.0013	.0360
Self-rating Mean	5.20	7.20	3.93	8.54	24.85
Other-rating Mean	6.29	7.32	4.95	7.63	26.20
Sample with Special Instructions (n = 75)					
Correlation	.283	.056	.556	.432	.275
Probability	.0140	.6350	.0001	.0001	.0170
Self-rating Mean	5.61	6.88	4.27	8.21	24.97
Other-rating Mean	5.75	7.22	4.36	7.86	25.19
Samples Combined (N = 116)					
Correlation	.278	.017	.636	.447	.294
Probability	.0025	.8590	.0001	.0001	.0014
Self-rating Mean	5.47	6.99	4.15	8.33	24.93
Other-rating Mean	5.94	7.26	4.57	7.78	25.55

Note. "Special instructions" included (a) recruitment of ratings by significant others who were "intimately involved on a day-to-day basis" with the respondent; (b) provision of an envelope labeled "Involved Other Person"; and (c) provision of an instruction sheet constructed specifically for the other rater. Samples "without special instructions" were not afforded the envelope or instruction sheet and were asked to have individuals who "know you well, involved other persons (such as, a spouse, roommate, or coworker)" to complete the other-rating.

[a]Subsumes the initial sample data.

Reliability

Test-retest Reliability

Test-retest (T-R) reliability coefficients are presented in Table 8 for the various samples (including the original sample) and relevant groupings of samples. The values for standard error of measurement are also provided in Table 8 for the combined student samples and for the combined nonstudent samples. Work subscale test-retest reliability did improve from .57 to .71 with attention to better scheduling within the quarter. The greater stability of nonstudent scores across subscales may attest to the greater variability in student behavior patterns either due to less maturation and/or to school life demands. The fact that the nonstudent Total scale T-R reliability coefficient was higher than any of the subscale coefficients presents an unusual pattern. Perhaps there exists a fairly stable "amount of self-management energy" which can be expended in somewhat differing directions with shifting priorities over time.

Overall, the Health subscale scores demonstrated the greatest T-R reliability; the Leisure scores, second best; and the Social scores, the lowest. These findings indicate that the scale scores are sufficiently reliable for purposes of group comparisons (Helmstadter, 1973). These T-R reliability coefficients might be considered actually quite high because the measured behavioral frequencies would be modifiable by change efforts and differing environmental events (Nelson, 1983).

Table 8

Test-retest Reliability Coefficients for Self-management Subscale and Total Scale Scores

Statistic	Work	Social	Health	Leisure	Total
		Initial Sample (n = 29)			
Correlation	.61	.72	.86	.76	.82
Probability	.0004	.0001	.0001	.0001	.0001
		Students without Better Scheduling (n = 44)			
Correlation	.57	.49	.89	.79	.71
Probability	.0001	.0007	.0001	.0001	.0001
		Students with Better Scheduling (n = 138)			
Correlation	.71	.53	.81	.74	.70
Probability	.0001	.0001	.0001	.0001	.0001
		Students Combined (n = 182)			
Correlation	.66	.52	.84	.76	.70
Probability	.0001	.0001	.0001	.0001	.0001
Standard error of measurement	2.06	2.02	1.55	1.17	4.31
		Nonstudents (All with Better Scheduling) (n = 49)			
Correlation	.74	.75	.87	.80	.87
Probability	.0001	.0001	.0001	.0001	.0001
Standard error of measurement	1.48	1.11	1.31	.86	2.13
		Groups with Better Scheduling Combined (n = 187)			
Correlation	.71	.57	.83	.75	.74
Probability	.0001	.0001	.0001	.0001	.0001

Table 8 (Continued)

Statistic	Work	Social	Health	Leisure	Total
	All Groups Combined (N = 231)				
Correlation	.67	.55	.85	.76	.72
Probability	.0001	.0001	.0001	.0001	.0001

Note. Samples with "better scheduling" received test administrations scheduled near the midpoint or the very beginning of students' academic quarter. This scheduling was implemented to avoid the substantially different academic conditions which typically prevailed in the transition from the beginning of the quarter into the midpoint or from the midpoint into the end of the quarter.

Matching Test and Retest Scores

The second method of assessing stability of scores, using the binomial distribution, produced results even more significant than those in the initial study. After ties and Leisure scores (due to their possible inflation) were eliminated from the comparison, 139 matches and 49 nonmatches remained for the highest test and retest scores; and 148 matches and 50 nonmatches, for the lowest test and retest scores. The proportion of high score matches was significant at $p = .0004$ ($p = .05$, in the initial study); the proportion of low score matches at $p = .00048$ ($p = .005$, in the initial study).

Internal Consistency Reliability

The interitem consistency reliability coefficients were .67 for the Total scale, .51 for Work, .41 for Social, .48 for Health, and .62 for Leisure, as indicated by Cronbach's alpha procedures performed on all 40 self-management items. Each item's contribution to subscale and Total scale reliability is presented under Individual item analyses (p. 71).

Nunnally's (1978) recommendation was followed to improve internal consistency reliability by applying Cronbach's a procedures with the best items when there are numerous uncorrected item-total scale correlations of at least .25 (See Table H-2, Appendix H, for those uncorrected correlations). By retaining the 23 items with corrected item-total scale correlations of at least .20, the total scale a coefficient was improved to .71 and the Work scale to .60. The Leisure scale a coefficient remained the same and the other two subscales evidenced only slightly lowered a coefficients. Again Individual item analyses (p. 71) may be consulted for (a) the corrected item-total scale and item-subscale

correlations with all 40 and then the 23 best self-management items included in analyses and (b) comparison of the initial and follow-up Cronbach's *a* results (p. 73).

By Nunnally's (1978) standards of reliability for the early stages of research with an instrument, these internal reliability coefficients were modest for the Total scale and fair for the Work and Leisure subscales with deletion of the poorer items. The results indicate poor internal reliability for the Social and Health subscales. However, both were well above the lower criterion *a* level of .30 that Nunnally (1978) has recommended for scale retention.

Validation

Construct Validity

Internal consistency analyses. As can be seen in Table 9, PPM correlations among the subscale and Total self-management scores were generally as expected. Subscale scores were only moderately related to one another and more highly related to the Total scale score (all subscale-Total scale *r*s > .46, average *r* = .62). The Health and Work subscales were the most highly related to Total self-management; Leisure, the least related. Among the subscales, the Work subscale attained fairly high correlations with the Social and Health subscales, but not with the Leisure subscale.

Table 9

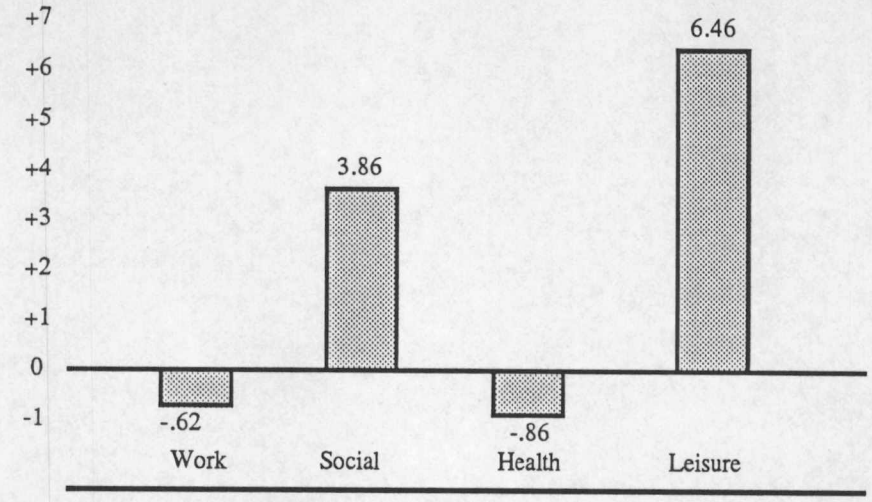
Correlations among Subscale and Total Self-management Scores (N = 1512)

SDF Scale	Work	Social	Health	Leisure	Total
Work		.258	.255	.128	.691
Social			.169	.106	.587
Health				.174	.716
Leisure					.468

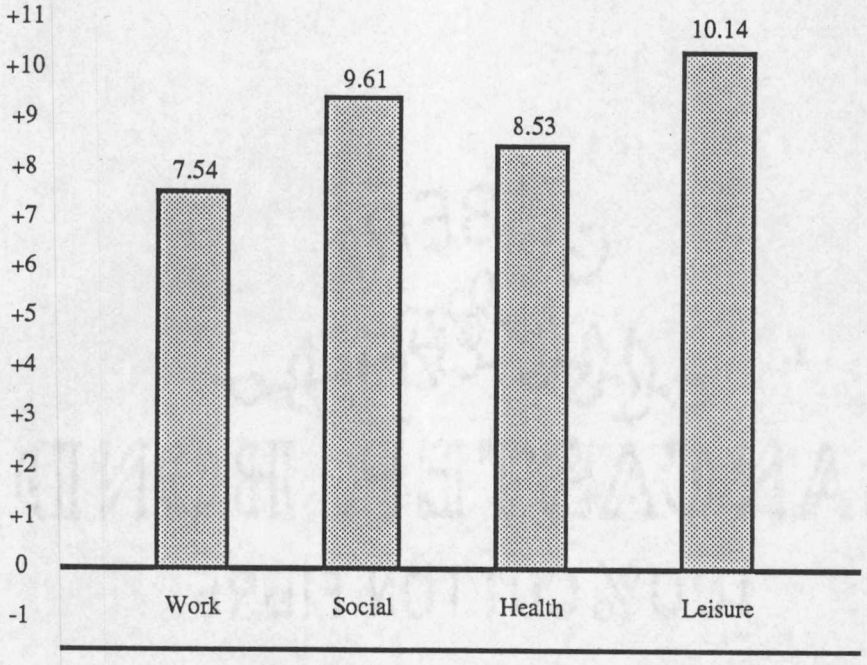
Note. p = .0001 for all correlations.

The graphical comparison of the subscale scores of the upper criterion group, "effective self-managers," with those of the lower criterion group, "ineffective self-managers," displays a dramatic difference in the pattern of subscale scores. As shown in Figure 1, effective self-managers tended to achieve a more optimum balance of scores across the subscales than did the ineffective self-managers. Ineffective self-managers exhibited Social and Leisure subscale scores which were relatively much higher and out of balance with their very low Work and Health scores.

Individual item analyses. Statistical properties of each SDF item are presented here and compiled in Table 10 for item analyses and as circumstantial evidence regarding the content validity of the SDF. Henrysson (1971) has suggested this pictorial technique relating each item's number of omissions, frequency distributions of responses, and item-scale correlations. Item reliabilities, item correlations with



Means for Ineffective Self-managers (n = 237)



Means for Effective Self-managers (n = 223)

Ineffective self-managers were individuals scoring at least one standard deviation below the total mean; effective self-managers, individuals scoring at least one standard deviation above the total mean. Total N = 1512.

Figure 1. Subscale Means for Effective and Ineffective Self-managers

Table 10

Item Analyses for Self-description Form

Item	Omissions	Response frequencies (%)					Corrected Item-scale Correlations				Reliability	Relationship to other-rating	Feedback frequency	
							40 items[a]		23 items[b]					
		0	1	2	3	4	To Total	To sub-scale	To Total	To sub-scale			W[c]	V[d]
Item - WORK														
+ Filing work materials	19	16	22	29	27	6	.094	.102			.704	.233	2	++
+ Attaining work goals	6	1	3	24	62	10	.334	.417	.345	.470	.489	.249	1	
+ Completing work assignments	8	1	2	14	59	24	.289	.382	.289	.446	.631	.319	3	
+ Setting work goals	15	1	6	26	51	16	.306	.276	.364	.388	.538	.194		
+ Reading professional materials	5	6	16	30	38	10	.274	.184	.344	.218	.555	.032	4	
- Over-extending	1	3	19	44	26	8	.088	.103			.601	.134	4	
- Jumping from task to another	6	3	17	42	33	5	-.108	-.160			.598	.030	4	
- Putting off tasks	19	1	18	50	26	5	-.216	-.312	-.116	-.243	.550	.284		
- Losing work materials	4	18	58	19	4	1	-.164	-.273			.556	.116	1	
- Failing to meet deadlines	13	14	56	24	5	1	-.236	-.385	-.155	-.345	.505	.062	3	
Item - SOCIAL														
+ Keeping my word	1	0	1	3	48	48	.252	.213	.234	.224	.474	.077	1	
+ Initiating conversation	8	1	8	29	51	11	.163	-.042			.640	.208		
+ Listening closely	1	1	2	18	61	18	.236	.225	.260	.246	.382	-.059		
+ Encouraging others	9	0	2	23	53	22	.289	.167	.369	.258	.460	.129		
+ Showing affection	18	0	4	13	52	31	.190	.133			.689	-.013	1	
- Rambling in conversation	12	3	28	41	23	5	-.071	-.100			.646	.251		++
- Criticizing others	4	6	48	40	6	0	-.224	-.322	-.116	-.136	.570	.120		
- Interrupting others	3	4	39	41	14	2	-.114	-.305			.524	.086		
- Dominating conversation	8	3	29	48	18	2	.007	-.121			.688	.259	3	
- Reprimanding others	24	6	40	38	14	2	-.014	-.139			.515	.292	4	++

Table 10 (Continued)

Item	Omissions	Response frequencies (%)					Corrected Item-scale Correlations				Reliability	Relationship to other-rating	Feedback frequency	
							40 items[a]		23 items[b]					
		0	1	2	3	4	To Total	To sub-scale	To Total	To sub-scale			W[c]	V[d]
Item - HEALTH														
+ Flossing my teeth	2	14	25	27	25	9	.251	.152	.253	.160	.873	.642	5	
+ Getting adequate rest	1	2	16	29	48	5	.219	.209	.158	.122	.693	.360		
+ Vigorous physical activity	4	5	20	34	30	11	.224	.223	.274	.297	.706	.426	1	
+ Drinking water	8	1	10	22	44	23	.212	.231	.222	.265	.716	.517	1	
+ Stretching exercises	14	9	25	30	29	7	.296	.324	.352	.412	.783	.460		
- Using hard drugs	4	88	8	2	1	1	-.070	-.087			.722	.125	4	++
- Eating excessively	5	5	26	43	21	5	-.185	-.256			.646	.333	2	
- Smoking cigarettes	1	68	8	4	9	11	.000	-.117			.940	.834		
- Eating junk food	6	1	16	41	33	9	-.146	-.203			.727	.439		
- Gulping meals	18	7	27	38	22	6	-.224	-.212	-.082	-.061	.684	.282		
Item - LEISURE														
+ Creating art objects	9	25	39	25	8	3	.222	.371	.281	.371	.792	.360	2	+
+ Attending art/cultural exhibits	3	17	41	33	7	2	.327	.386	.383	.423	.701	.417	1	
+ Playing musical instruments	4	49	24	15	8	4	.154	.253			.876	.658		
+ Attending concerts	4	13	44	33	8	2	.216	.380	.259	.360	.750	.445	1	+
+ Writing creatively	1	44	32	15	6	3	.221	.384	.274	.350	.714	.397	2	+
+ Reading leisurely	2	4	15	32	35	14	.271	.256	.323	.302	.705	.426	1	
+ Gardening/yardwork	4	14	26	31	23	6	.123	.100			.786	.659	2	
+ Outdoor nature activities	4	4	19	40	27	10	.293	.320	.334	.270	.654	.296		
+ Hobby not on list	19	8	13	28	34	17	.245	.322	.289	.305	.562	.279	7	
+ Dancing	19	15	31	31	16	7	.099	.220			.781	.437	1	

Table 10 (Continued)

Item	Omissions	Response frequencies (%)					Corrected Item-scale Correlations				Reliability	Relationship to other-rating	Feedback frequency	
							40 items[a]		23 items[b]					
		0	1	2	3	4	To Total	To sub-scale	To Total	To sub-scale			W[c]	V[d]
Item - FILLER														
Drinking coffee	3	25	15	15	32	12							2	
Speaking softly	14	2	17	38	36	6							2	
Going to bed early	8	5	34	40	20	1							1	
Whistling	6	24	31	29	13	3							3	+
Yawning	19	1	17	40	36	6								+
Drinking tea	20	9	18	26	33	14							1	
Crossing legs	8	3	8	18	48	22							1	+
Doodling	8	8	29	31	23	9								
Shifting feet	25	9	24	30	29	8							5	++
Watching movies on TV	6	3	17	41	30	9							1	
Item - SOCIAL DESIRABILITY														
Donating to all good causes	5	7	39	41	12	1							10	++
Aiding stranded motorists	5	47	37	13	2	1								++
Eating only nutritious food	6	9	23	33	33	2							1	
Helping anyone	8	0	6	39	42	13								
Exercising more than 2 x day	4	27	36	21	11	5							2	
Stopping a mugging	28	84	10	2	1	3							16	++

Note. + indicates occasional comment or question. ++ indicates frequent comment or question. Reliability N = 230; Relationship with other-rating N = 116; all other statistics, except for item-scale correlations, N = 1512.

[a]Coefficient a: Total scale = .67, Work = .51, Social = .41, Health = .48, Leisure = .62; N = 1309.

[b]Coefficient a: Total scale = .71, Work = .60, Social = .39, Health = .44, Leisure = .62; N = 1390.

[c]Written on questionnaires. [d]Verbal, offerred solicited and unsolicited.

other-ratings, and frequency data on written and verbal feedback to each item--evidence regarding SDF face validity--have been added to complete the picture. Thus, these individual item results serve as evidence for construct validation and, additionally, for content and face validation. These item results include the following areas of information: discriminating power, relationship to subscale and Total scale, test-retest reliabilities, agreement of self-other ratings, omissions, frequency distributions of responses, and verbal and written feedback.

Discriminating power. Half of the self-management items demonstrated good power to discriminate between low and high scorers. This discriminating power, the term used by Henrysson (1971), is evident in the item-total scale uncorrected correlations in Table H-2, Appendix H. Twenty of the 40 items achieved uncorrected correlations in excess of .30, the value which is usually considered to be acceptable (Nunnally, 1978). Absence of power to discriminate, as indicated by correlation close to zero, was evidenced with "over-extending myself in work commitments"; and poor discriminating power (correlations near .10 or below), with "dominating conversation," "reprimanding others," "using hard drugs," "smoking cigarettes," "playing a musical instrument," "gardening/working in the yard," and "dancing."

Examination of corrected item-total scale correlations (Table 10), with all self-management items included, reveals a sharp drop in the number of correlations in excess of .30. Corrected correlations were computed between an item and the Total scale score summed without that item's value. Only three items showed really good discriminating power, i.e., "attaining work goals," "setting work goals," and "attending art and

cultural exhibits." This finding certainly supported the wisdom of computing corrected correlations to prevent reliance upon possibly spurious results in uncorrected correlations. The items with poor discriminating power included "filing work materials," "over-extending myself in work commitments," "using hard drugs," "smoking cigarettes," and all negative Social items. The lack of variability in responding might have contributed to the poor correlations of the negative Social items, except with "rambling in conversation." With this latter item, ambiguity in meaning appears to have been a contributing problem. The very skewed distributions of responses to the items, "using hard drugs" and "smoking cigarettes," certainly accounted for the poor item-total scale and item-subscale correlations.

Relationship to subscale and Total scale. Examination of the uncorrected item-subscale and item-total scale correlations in Table H-2, Appendix H, indicates that items were most highly correlated and in the expected direction with the subscales in which they were originally placed. The only exception to this general finding was the Work item related to over-extending oneself. This item was approximately equally related to Work (negatively) and to Leisure (positively). Perhaps there is some tendency for individuals who become involved in numerous work activities to become involved also in multiple leisure activities. However, this Work item's item-scale correlations were poor in both subscales and among the poorest of the corrected correlations.

Because using the correction formula did make such a great difference in item-subscale and item-total scale correlations, the corrected correlations (Table 10) must be considered the more accurate reflection of

each item's relationship to its subscale and to the Total scale. When the Total scale was made more internally consistent by including only the 23 best items, the strong item-total scale correlations, i.e., those .35 or greater, were with the following items (in rank order): "attending art/cultural exhibits," "encouraging others," "setting work goals," and "doing stretching exercises." These four items, actually one from each subscale, might be considered to be the best predictors of the dimension (hoped to be total self-management effectiveness) measured in the SDF.

Test-retest reliabilities. The T-R reliabilities of individual items (Table 10) yield information regarding the stability of individual self-management behaviors. Only one item had a reliability coefficient of .9 or above ("smoking cigarettes"), and two were in the .80-.89 range ("flossing my teeth" and "playing a musical instrument"). The majority of items, i.e., 23, attained coefficients in the .60-.79 range. Poorest reliabilities were in the .38-.49 range and were obtained, in ascending numerical value, with "listening closely to others' comments," "encouraging others," "keeping my word," and "attaining work goals."

Agreement of self-other ratings. Very few of the items showed a strong agreement between self-ratings and ratings by others (Also see Table 10). Again, the behavior yielding the strongest relationship was "smoking cigarettes" (.834). Only three other items attained coefficients of at least .60, i.e., "flossing my teeth," "playing a musical instrument," and "gardening/working in the yard." It appears that behaviors which were the most observable and countable by others yielded the highest self-other agreement. Most of the items in the Social

subscale manifested essentially no relationship between self- and other-ratings.

Omissions. The highest numbers of omissions were on filler and social desirability items, i.e., "shifting feet" and "stopping a mugging," specifically, and the entire categories, in general. The only self-management item evidencing similar frequency of omission was "reprimanding others" which was also subject to some written and frequent verbal comment/questioning. The three items on the back of the last SDF page ("showing affection toward others," "gulping meals," and "dancing") were omitted altogether 18 times; some respondents probably did not even see these last items. "Engaging in a hobby not otherwise listed in questionnaire" might have been skipped because it was placed before the last listed hobby and respondents might have planned to return to it after completing the questionnaire. There were no items that respondents consistently omitted. Only 34 questionnaires out of 1553 were excluded from analyses because the respondent omitted more than three self-management items. However, 142 out of 1553 were excluded from personal evaluation analyses due to omission of more than three personal evaluation ratings on a questionnaire.

Frequency distributions of responses. A moderate spread in the frequency distributions of responses was evidenced with most items. However, very limited variability in responding occurred with two Health items, i.e., "using hard drugs" and "smoking cigarettes." Overwhelmingly, the populations sampled either never smoked or used hard drugs or did not report engaging in these behaviors (thus, responded in a socially desirable manner). Examination of the item reliability and other-rating

correlations indicates that the latter might have been true with "using hard drugs" but probably not with "smoking cigarettes." The frequency of smoking cigarettes was confirmed by the other-rating correlation of .834.

Across all subscales, the participants' responses can be seen to have fallen primarily into the middle response values, i.e., 1, 2, and 3 (Rarely, Periodically, and Regularly). The spread in responses to Social items clearly shifted from higher frequency with the positive direction items to lower frequency with the negative direction items. This shift was also evident, although not as dramatically, with the Work items. "Other" ratings on the positive Social items were generally less correlated with the "respondent" ratings than on the negative Social items. The pattern of these Social ratings indicated the possibility of respondents' over-rating frequency of the positive behaviors. The items included in the SDF and response format itself may have contributed to a tendency to respond in the mid-range and, in the case of Social behaviors particularly, toward the positive end of the frequency continuum for many positive items, and vice versa for many negative items.

Verbal and written feedback. Most informal verbal questioning arose regarding social desirability items (as indicated); one filler item, "shifting feet"; the Work item, "filing work materials"; the Social items, "rambling in conversation" and "reprimanding others"; and the Health item, "using hard drugs" (See Table 10, p. 71). Frequent sarcastic verbal comments made during questionnaire administrations indicated that respondents judged the filler items to be trivial and unrelated to the purpose of the inventory. The occurrence of these comments might reflect that less seriousness in completing the self-management items was fostered

by the inclusion of the filler items. Most informal written comment/questioning (as well as verbal) related to the social desirability items, "donating to all good causes" and "stopping a mugging." The purpose of these items appeared to be questionable and their completion frustrating for the respondents.

Content of informal written and verbal feedback from participants indicated problems with ambiguity of the behavioral definition and situational specificity with a number of items. Ambiguity of definition was expressed as a problem with these items: "going to bed early," "using hard drugs" (e.g., "What do you consider 'hard'?"), "filing work materials" (e.g., "That's not my job"), "creating art objects," "shifting feet," "jumping from one task to another" (e.g., "after I complete one"), "attending concerts" (e.g., "What kind?"), and "writing creatively." Situational specificity of behaviors seemed evident in the frequency of comments and of two responses being provided to cover different situations (with the same behavior) with the following items: "reprimanding others" (e.g., "part of my job as a teacher"..."as a mother"), "jumping from one task to another" (e.g., "required in my job"), "completing work assignments on time," "attaining work goals," "eating excessively," and "dominating conversation." "Flossing my teeth" was not applicable for denture-wearers; and "reading course/professional related materials" and "failing to meet deadlines" were seen as not applicable for some housewives.

A few angry or incredulous informal comments (four) were verbalized or written about the inappropriateness of results and appeared to reflect feelings of being threatened or attacked by the evaluation of abnormal or

unself-managed by the inventory. One participant reported that she had felt "intimidated" by this researcher because of her low scores, although the two had never had any direct contact. They have had to work through the respondent's resentments with the researcher because the respondent later sought a counseling relationship. However, these negative comments were far outnumbered by the frequency with which respondents remained after group presentations (approximately two to three per presentation) to discuss the problems they were encountering in the areas of self-management and to validate the "on-targetness" of their scores.

The content validity of the Leisure self-management items was severely questioned by several nonstudent participants. They indicated verbally and in writing that the Leisure subscale score did not reflect their true leisure activity participation because that scale did not include their activities of interest (e.g., "spending time with family!") or enough items (from one leisure survey constructor).

Most formal written feedback from the alumnae workshop participants was positive. Generally they reported that the presentation and inventory were personally relevant and germane to the workshop theme "Being the Best You Can: A Woman's Perspective" (e.g., "The self-management questionnaire gave useful information to evaluate myself; it helped pull all the other speeches together."). A few respondents' evaluations seemed to express anger with their results (e.g., "My scores were negative and I'm <u>not</u> an abnormal person as you made me feel that I might be.") or with the activity of completing the questionnaire (e.g., "Filling out the self-description form for me was both boring and a total waste of time.").

The exact number of these negative evaluations was lost in the compilation of workshop evaluation data by the workshop organizers.

Only two counseling center staff members provided written feedback about personal completion of the SDF. One reported "fast and pleasant" completion, but "trouble" with the filler and social desirability items and the Value column ratings. The other counselor found the SDF to be "very interesting" and posed several research questions and suggestions. Interestingly, these two counselors recruited the most client participants.

Factor analysis. With application of the principal components solution and varimax rotation, seven factors with eigenvalues greater than 1.00 emerged. Cumulatively, those seven factors accounted for only 51.59% of the total variance. Table 11 presents the rotated factor eigenvalues and proportions of variance. Accounting for at least 75% of the variance would have been necessary for the factors to be considered as significant (Nunnally, 1978). The factors were too weak to indicate any significant underlying dimension(s). Neither was there adequate evidence to substantiate the existence of subscales as presently conceptualized. The first factor accounted for only 9.42% of the variance in the solution and had eight of 23 items that loaded on it above .30. The second factor accounted for 8.97% of the total variance and had five items loading above .30.

Table 11

Rotated Factor Eigenvalues and Proportions of Variance

	Factor						
	1	2	3	4	5	6	7
Eigenvalue	2.166	2.064	1.895	1.642	1.531	1.315	1.252
Proportion of variance	.0942	.0897	.0824	.0714	.0666	.0572	.0544

Although no significant factor(s) emerged, results of the factor analytic and Cronbach's alpha procedures suggest that a number of items should be retained and their number expanded in refining the construct of comprehensive self-management. Table 12 reports the rotated factor pattern containing factor loadings. Loadings at .30 are considered poor but indicative of adequate overlap in variance between variable and factor to make the loading eligible for interpretation (Comrey, 1973; Tabachnick & Fidell, 1983). Loadings above .30 reveal three clusterings, suggesting the potential for three dimensions. The questionnaire Items 4, 5, 10, 22, 27, 33, 47, and 50 (respectively, "flossing my teeth," "creating art objects," "attending art and cultural exhibits," "attending concerts," "writing creatively," "reading leisurely," "reading course/professionally related materials," and "engaging in a hobby not otherwise listed in questionnaire") seem to cluster along a potential dimension of artistic, community cultural, hobby, and reading involvement beyond work/school requirements. The exception of flossing teeth--actually loading only at

Table 12

Rotated Factor Pattern (N = 1390)

Item	Factor Loadings		
	1	2	3
(4) Flossing teeth	.303	.157	.247
(5) Creating art objects	.643	-.012	.156
(8) Keeping my word	-.015	-.012	.379
(10) Attending art and cultural exhibits	.693	-.027	-.096
(13) Attaining work goals	.053	.046	.395
(14) Criticizing others	-.013	-.067	-.079
(15) Getting adequate rest at night	.006	.055	.141
(22) Attending concerts	.590	.161	-.085
(24) Completing work assignments on time	-.035	.028	.738
(26) Participating in vigorous physical activity	-.014	.818	-.041
(27) Writing creatively	.575	.122	-.139
(30) Putting off unpleasant tasks	-.013	-.018	-.462
(31) Listening closely	.048	-.004	.076
(33) Reading leisurely	.416	.038	-.001
(36) Setting work goals	.050	.094	.112
(38) Drinking water	-.085	.432	-.034
(42) Encouraging others	.155	.139	.056
(44) Engaging in outdoor nature activities	.173	.620	.096
(47) Reading professional materials	.329	.057	-.015
(49) Doing stretching exercises	.091	.732	-.097
(50) Engaging in a hobby not otherwise listed	.366	.406	.245
(53) Failing to meet deadlines	.032	.052	-.765
(55) Gulping meals	-.068	.094	-.044

.303--may also portray a behavior "beyond normal requirements," in this case, as related to health. Items 26, 38, 44, 49, and 50 (respectively, "participating in vigorous physical activity," "drinking water," "engaging in outdoor nature activities," "doing stretching exercises," and "engaging in a hobby not otherwise listed in the questionnaire") seem to cluster around physical activity involvement. The third clustering, Items 8, 13, 24, 30, and 53 (respectively, "keeping my word"; "attaining work goals"; "completing work assignments on time"; "putting off unpleasant, but necessary, tasks"; and "failing to meet deadlines"), suggests a fulfillment of work and personal commitments.

Correlations with related respondent measures. The expected higher PPM correlations between self-management and personal evaluation scores were not consistently achieved. As can be seen in Table 13, provision of detailed, clear verbal instructions with an example item for the Value column rating improved correlations for the nonstudents more than the students. However, improvement was only slight except with the Health subscale. Correlations actually decreased with students who received instructions. Noteworthy, in spite of the unexpected results, was the consistent pattern of the Social subscale's yielding the lowest self-management and personal evaluation correlations. Although the correlations were generally good, except with the Social subscale, they cannot be considered with any confidence. Difficulties in completing the "Value" part of the instrument obscured these results and those of any analyses incorporating the personal evaluation scores.

PPM correlations of self-management Total and subscale scores of university counseling center clients with their Extent of Difficulties

Table 13

Relationship of Self-management Scores and Personal Evaluation Scores

Statistic	Work	Social	Health	Leisure	Total
		Initial Sample (N = 191)			
Correlation	.50	.27	.37	.58	.47
Probability	.0001	.0002	.0001	.0001	.0001
		Students without Instructions (N = 402)			
Correlation	.61	.35	.50	.57	.56
Probability	.0001	.0001	.0001	.0001	.0001
		Students with Instructions (N = 469)			
Correlation	.52	.31	.49	.51	.47
Probability	.0001	.0001	.0001	.0001	.0001
		Nonstudents without Instructions (N = 247)			
Correlation	.52	.47	.54	.54	.55
Probability	.0001	.0001	.0001	.0001	.0001
		Nonstudents with Instructions (N = 255)			
Correlation	.56	.50	.68	.53	.61
Probability	.0001	.0001	.0001	.0001	.0001

Note. Samples which received "instructions" were provided verbal guidance by an experimenter through potential responses to the first behavior item, "drinking coffee" (actually a filler item). The example responses were given to clarify particularly the Value column response procedure.

ratings were in the expected direction, particularly with Work self-management scores. Those results are presented in Table 14. As expected, the highest negative correlation, although moderate, was between Work self-management and problem "interference with academic performance." Of the four counseling center groups, the Overcoming Student Stress group exhibited the highest correlations between Work scores and academic interference, i.e., -.47 compared to -.25 of the How to Study group. Surprising results were that this latter correlation was the lowest of the groups on this comparison and that Leisure self-management was positively related to problem interference with academic performance and living effectively with the stress group.

Content and Face Validity

In addition to the primary evidence--steps taken during scale construction to insure content validity--the statistical properties of each SDF item (see Table 10, p. 71) are considered circumstantial evidence regarding SDF content validity. Those relevant results were previously presented under Individual item analyses.

Evidence regarding the face validity of the SDF included (a) the data on written and verbal feedback regarding the SDF and each item (also presented under Individual item analyses) and (b) findings on the process of administering and completing the questionnaire. This process appeared to be generally easy and straightforward. The length of time required and the process of completion were never questioned or criticized. Participants appeared to complete the questionnaire easily, with interest, and usually within 15 to 20 minutes. Only two specific problems with response format were obvious, i.e., interpreting the Level of

Table 14

Relationship between Self-management Scores and Extent of Difficulties Ratings by Counseling Center Clients

Extent of Difficulties Rating Scale	SDF Scale: Work	Social	Health	Leisure	Total
All Clients Combined					
Interference with academic performance[a] N = 168					
Correlation	-.364	-.130	-.098	-.041	-.282
Probability	.0001	.0920	.2080	.5980	.0002
Interference with living effectively[b] N = 129					
Correlation	-.252	-.081	-.072	-.138	-.231
Probability	.0040	.3600	.4180	.1190	.0085
Individual Clients					
Interference with academic performance n = 38					
Correlation	-.352	-.072	-.275	-.147	-.348
Probability	.0303	.6686	.0952	.3780	.0324
Interference with living effectively n = 38					
Correlation	-.161	.018	-.137	-.099	-.157
Probability	.3340	.9148	.4116	.5538	.3452
How to Study Group Clients					
Interference with academic performance n = 61					
Correlation	-.254	-.297	-.100	-.068	-.282
Probability	.0483	.0203	.4441	.6013	.0277

Table 14 (Continued)

Extent of Difficulties Rating Scale	SDF Scale				
	Work	Social	Health	Leisure	Total
Interference with living effectively					
n = 41					
Correlation	-.267	-.385	-.019	-.225	-.325
Probability	.0920	.0130	.9075	.1570	.0381
Stress Group Clients					
Interference with academic performance					
n = 33					
Correlation	-.471	-.105	.001	.254	-.225
Probability	.0056	.5604	.9965	.1533	.2088
Interference with living effectively					
n = 31					
Correlation	-.244	.121	-.054	.204	-.062
Probability	.1864	.5181	.7710	.2714	.7409
Assertiveness Group Clients					
Interference with academic performance					
n = 36					
Correlation	-.419	.061	-.065	-.150	-.285
Probability	.0109	.7245	.7074	.3814	.0915
Interference with living effectively					
n = 19					
Correlation	-.266	.256	-.152	-.380	-.292
Probability	.2716	.2906	.5351	.1088	.2246

[a]Clients' rating of the extent to which their presenting problems interfered with their academic performance.

[b]Clients' rating of the extent to which their presenting problems interfered with their living effectively.

Participation categories and the Value column. Informal written feedback indicated that participants had some difficulty "fitting" the levels of participation to the behaviors and great difficulty understanding what was sought with the Value column. Often the "+" and the "-" would be circled. Guides to the levels of participation were sometimes written in on pages subsequent to the first page.

Concurrent Validity

Contrasted groups. The score means of the six groups in the first contrasted groups comparison (track club members, SOAs, and four counseling center groups) are presented in Table 15. The results of the one-way analyses of variance comparing the Total self-management scores and subscale scores among the six contrasted groups are summarized in Table 16. Using an *a* level of .005 to insure significance of findings with the multiple comparisons being made, the groups varied significantly on only the Health subscale and the Total scale. Follow-up analyses with the Tukey Studentized Range Test (Tables 17 and 18) indicated that track club Health subscale and Total scale scores were significantly higher than all other groups. The Total scale score difference probably reflected the Health subscale difference because the track club scores were again significantly higher than all other groups. The Work scores of SOAs and track club members were much higher than those of the individual clients. Interestingly, all clients, particularly individual clients, were much higher on their Health subscale scores than the SOAs. However, significance was not achieved in either of these latter comparisons.

Table 15

Score Means of Contrasted Groups

Group	Scale Score Mean				
	Work	Social	Health	Leisure	Total
Track Club Members (n = 53)	3.57	6.38	8.09	8.17	26.22
SOAs (n = 43)	4.12	6.14	2.07	8.94	21.27
Individual Clients (n = 31)	.84	5.23	4.16	7.95	18.18
How to Study Group (n = 41)	2.71	5.44	3.63	8.40	20.18
Stress Group (n = 27)	2.96	5.00	4.07	7.85	19.89
Assertiveness Group (n = 24)	2.50	5.75	3.29	7.46	19.00

Table 16

Analyses of Variance Summaries for the Subscale and Total Scale Scores[a] Contrasted Groups

Scale	SS	MS	F	p
Work				
Between Ss	224.02	44.80	2.92	<.0144
Within Ss	3271.08	15.36		
Social				
Between Ss	55.05	11.01	1.09	<.3670
Within Ss	2151.63	10.10		
Health				
Between Ss	1012.91	202.58	14.78	<.0001
Within Ss	2919.83	13.71		
Leisure				
Between Ss	43.67	8.73	1.32	<.2540
Within Ss	1404.80	6.60		
Total				
Between Ss	1813.08	362.62	4.88	<.0003
Within Ss	15832.75	74.33		

[a]Between Ss df = 5 and within Ss df = 213 for all ANOVAs.

Table 17

Results of the Tukey Studentized Range (HSD) Test* for the Health Subscale Scores: Contrasted Groups

Group	Track Clubs	Individual Clients
Mean	8.09	4.16
N	53	31

Group	Stress Group	How to Study Group
Mean	4.07	3.63
N	27	41

Group	Assertiveness Group	SOAs
Mean	3.29	2.07
(N	24	43

Note. The group means underscored by the same line were significantly different from each other.

*a = .05

Table 18

Results of the Tukey Studentized Range (HSD) Test* for the Total Scale Scores: Contrasted Groups

Group	Track Clubs	SOAs
Mean	26.22	21.27
N	53	43

Group	How to Study Group	Stress Group
Mean	20.18	19.89
N	41	27

Group	Assertiveness Group	Individual Clients
Mean	19.00	18.18
N	24	31

Note. The group means underscored by the same line were significantly different from each other.

*a = .05

In the second contrasted groups comparison, the expected significant trend was found in increasing scores on the Work, Health, and Total scale scores across groups collapsed in terms of their presumed self-management effectiveness. That trend was not observed with the Social and Leisure subscale scores. The results of the one-way ANOVAs comparing self-management subscale and Total scale scores are summarized in Table 19. The subscale and Total scale means for each collapsed self-manager group and the results of the follow-up analyses with the Tukey Studentized Range Test are presented in Table 20.

Correlations with ratings by others. Comparisons of the respondents' self-ratings with ratings by significant others were presented in Table 7 (p. 63). Having a person more intimately involved with the respondent appears to have decreased the Health behavior ratings correlations, improved the Social only slightly, and essentially maintained the Work and Leisure correlations. Even with the procedural changes for this part of the study, these relationships generally proved much lower than expected. There was virtually no relationship between the way individuals rated their social habits and the way their "significant other" rated those habits. There was a reasonably good fit between ratings for the Health and Leisure areas. Behaviors sampled for these areas were probably highly observable and countable to the respondents and to the persons chosen by the respondents. The low Work self- and other-ratings correlations probably reflected the lack of opportunity for observation of work behaviors by the other.

Unlike the very restricted range of academic and clinical ratings for the nursing students, the lab grades for the technical school students

Table 19

Analyses of Variance Summaries for the Subscale and Total Scale Scores[a] Poor, Average, and Good Self-manager Division of All Respondents

Scale	SS	MS	F	p
Work				
Between Ss	729.41	364.70	26.25	<.0001
Within Ss	20965.24	13.89		
Social				
Between Ss	87.05	43.53	4.45	<.0118
Within Ss	14763.80	9.78		
Health				
Between Ss	620.32	310.16	17.15	<.0001
Within Ss	27292.38	18.09		
Leisure				
Between Ss	52.51	26.25	4.21	<.0150
Within Ss	9406.38	6.23		
Total				
Between Ss	3298.78	1649.39	22.39	<.0001
Within Ss	111166.78	73.67		

[a]Between Ss df = 2 and within Ss df = 1509 for all ANOVAs.

Table 20

Score Means and Tukey Studentized Range (HSD) Test Results*
Poor, Average, and Good Self-manager Division of All Respondents

Group	Scale Score Mean				
	Work	Social	Health	Leisure	Total
Poor Self-Managers (n = 354)	2.68	6.71	3.28	7.88	20.55
Average Self-Managers (n = 690)	3.79	6.14	3.82	8.20	21.95
Good Self-Managers (n = 468)	4.58	6.53	4.94	8.39	24.44

Note. The group means joined by the same vertical line were significantly different from each.

*a = .05.

covered a full range of numerical values from 20 to 100. That fuller range was portrayed as expected in a higher correlation with Work subscale scores for the technical school students. Their correlations were .45 with concurrent grades and .57 with previous grades. The correlation between the nursing students' Work scores and their academic grades was .38 and their clinical grades was .32. Full findings of PPM correlations with performance-based grades of the technical school students are provided in Table 21.

Table 21

Correlations between Self-management Scores and Grades of State Technical School Students

Statistic	Work	Social	Health	Leisure	Total
		With Concurrent Grades			
n = 53					
Correlation	.446	-.012	.397	-.003	.386
Probability	.0008	.9310	.0032	.9824	.0043
		With Previous Grades			
n = 20					
Correlation	.565	.184	.155	-.034	.377
Probability	.0094	.4379	.5130	.8875	.1016

In the comparison between SOA ratings and ratings by the SOA supervisor, a higher PPM correlation on the Social subscale ratings was achieved than with previous other ratings, but not a significant one,

i.e., .22, p = .334. Work subscale scores were not correlated at all as anticipated: r = -.20, p = .384. This comparison was perhaps confounded by the effusively positive perception of the assistants and the orientation program held by the SOA supervisor. A positive supervisor bias may have been reflected in the higher mean scores with less standard deviation of the supervisor's ratings in comparison to the SOAs (supervisor's Work: 8.81, with S.D., 2.02, compared to the SOA mean, 4.29, with S.D., 2.83; supervisor's Social: 8.90, with S.D., 1.48, compared to the SOA mean, 6.05, with S.D., 3.83).

CHAPTER IV

DISCUSSION AND CONCLUSIONS

The purposes of this study were to examine the psychometric properties of the SDF and to make recommendations for the further development of the instrument. Two sections will complete those purposes. The first will discuss the psychometric properties of the SDF based upon findings from this and related studies. The second section will present conclusions and recommendations for future research with the instrument.

Discussion

Psychometric properties will be discussed first from the standpoint of support for the existence of a psychological construct(s). To explore whether the SDF actually measures a construct(s), the psychometric soundness of the SDF will be described in terms of its test-retest reliability and its construct validity by method of internal consistency (Anastasi, 1976; Nunnally, 1978). An overlying cross-structure is presumed to exist, to be comprehensive self-management effectiveness, and to be comprised of the underlying dimensions or constructs: work, social, health, and leisure self-management effectiveness. The second aspect of this discussion will seek to establish the meaning of the Total scale and subscales, i.e., the meaning of construct(s) being measured, as based on relationships with external criteria (Anastasi, 1976; Nunnally, 1978). Thus, empirical support for external validation of the psychological cross-structure and its multidimensions will be examined.

Empirical Support for Measurement of a Construct

Test-retest reliability was found to be sufficient for purposes of group comparison and perhaps quite good considering the changeable nature of the behaviors being assessed and of self-management effectiveness as it is theoretically conceived. Excellent further support for the stability of SDF scores was found in the highly significant number of matches on test and retest high score and on test and retest low score.

The SDF test-retest reliability appears to reflect the greater stability of presumed self-management effectiveness, as would be expected, with the more stable nonstudent samples. Health subscales scores were quite stable across student and nonstudent samples; and Social subscale scores, the least stable with the student samples. Work subscale scores appeared responsive to differing school demands for the students and fairly stable for nonstudents. Across subscales, nonstudents' scores were more stable than those of students. The following long-term stability of scores has been found with a midlife nonstudent sample (N = 101) retested after two years: Total test-retest correlation = .62, Work = .51, Social = .57, Health = .75, and Leisure = .60 (Thomas, 1985). Differential findings regarding the short-term stability of scores with students and nonstudents should be considered preliminary and suggestive due to the fairly small sizes of the nonstudent samples in this study.

Results from the Cronbach's alpha procedures, corrected item-scale correlations, and factor analysis indicate the potential for the SDF to measure an overlying cross-structure with underlying factors. With the deletion of the 17 self-management items with less than .20 corrected item-total scale correlations, the a coefficients were slightly improved

for the Total scale and Work subscales and were, for early stages of research, modest for the Total scale and fair for the Work subscale. Internal reliability coefficient values were maintained for the remaining subscales and were fair for the Leisure subscale and poor, but adequate, for retention of the Social and Health subscales. Results of the Cronbach's a procedures indicate increased homogeneity of measurement by the Total scale and Work subscale without loss of homogeneity for the other subscales. The rotated factor loadings also suggest the possibility for measurement of underlying dimensions. The three suggested dimensions are as follows:

1. behaviors "beyond normal requirements" in leisure, work, and health realms, but primarily in the leisure realm;
2. physical activity involvement; and
3. fulfillment of work and personal commitments.

These potential dimensions can be seen to be somewhat aligned, but not entirely consistent, with leisure, health, and work self-management, i.e., the three subscales with the highest internal reliability coefficients.

It should be remembered, however, that no significant factor(s) emerged in the factor analytic procedures. Therefore, evidence did not exist for a clear psychological construct represented by the Total scale or the subscales as currently constructed. The factor analytic results did not provide justification for use of a summative score. What can be inferred is that factor analysis with the 23 best self-management items produced rotated factor loadings suggestive, like the results of the Cronbach's a procedures, of potential underlying self-management dimensions. Both sets of results indicate the need for generating further

items for each of the factor loading clusters in the same theoretical direction that guided initial item generation.

Prior to further item generation, the suggested dimensions require careful scrutiny. For example, even the first, and strongest, potential dimension is suspect because of the preponderance of Leisure items that loaded in the first clustering. The content validity of the Leisure subscale must be severely questioned, as it was by several respondents. It is evident with examination of the actual Leisure items (See Table B-1, Appendix B) that a respondent might easily engage in a full repertoire of constructive leisuretime pursuits and accrue only a zero-to-low Leisure score. That person's leisure behaviors would not have been represented in the leisure behaviors sampled by the SDF. The implication for further item generation is to sample more representatively the Leisure self-management behavior domain perhaps to the exclusion of some current items. Another possibility for item generation is to sample leisure experience more qualitatively than quantitatively (Meara, 1985).

The format and composition of the instrument may have contributed to some inaccuracy in subject responding. The emergence of at least one significant factor might have been confounded by possible measurement problems revealed in the individual item analyses. Those analyses reflected the possibility that the Social items elicited a tendency to respond in a socially desirable manner, i.e., somewhat toward the positive end of the frequency continuum for many positive items and vice versa, for many negative items. An overlying tendency to respond in the mid-range seemed evident with responses to the Social and Work subscales, i.e., respondents tended to note frequency as Rarely, Periodically, and

Regularly, rather than Never or Always. Lack of variability in responding may have even existed for the other subscales, but was not as visually evident in the results. Problems with interpretation of the vague category definitions for Level of Participation may have contributed to lack of variability in responding. Written and verbal feedback from respondents indicated problems with ambiguity in behavioral definitions, situational specificity of many behaviors, nonapplicability of some behaviors, and irrelevance of social desirability and filler items. Questionnaire revision might remedy all of these measurement problems and facilitate factor analytic reflection of the true variance due to individual differences in self-management effectiveness.

Further construct validation support by an internal consistency method was provided by the moderate relationships of subscale scores to each other and stronger relationships to the Total scale score. These results suggest that (a) each subscale is measuring something different from the other subscales, possibly an underlying self-management dimension, and (b) also making a contribution to the Total score, i.e., to measurement of a cross-structure of total self-management. Here again, the measurement qualities of the Leisure subscale must be questioned because that subscale was the least related to the Total scale (r = .47). This finding in combination with the limited range of Leisure scores, the tendency toward high Leisure scores (even with halving these all-positive scores), and the questions regarding the content validity of the Leisure items reflects adversely on the construct validity of this subscale.

The difference in patterns of subscale score means for "effective self-managers" (a balanced pattern) versus "ineffective self-managers" (an unbalanced pattern) is an interesting, but clouded, piece of evidence regarding the construct validity of the SDF. The difference in patterns appears initially to substantiate the existence of broad-spectrum self-management effectiveness reflected in four different dimensions. Those who exhibited broad application of self-management, as inferred from high Total self-management scores, appeared to balance that application across the four realms of their lives. Those who ineffectively managed their lives applied self-management in an unbalanced manner across life dimensions, i. e., to the neglect of work and health self-management with selective attention to social and leisure self-management. This finding might be consistent with the proposal in self-management theory that quality of life is achieved by managing daily events across all major dimensions of one's life (Williams & Long, 1983). Perhaps when work and health spheres are managed effectively, social and leisure spheres are enhanced.

However, an alternative explanation may exist for the difference in balance across subscale scores. The patterns may merely reflect the spread in distribution of scores achieved by the Work and Health subscales and the lack of spread--in fact, the predominantly positive scores--of the Social and Leisure subscale distributions. Thus, the patterns may be reflecting the strength in discriminating power--construct validity--of the Work and Health subscale scores and the weakness of the Social and Leisure subscales.

Empirical Evidence for the Meaning of the Subscales and Total Scale

The empirical evidence regarding the meaning of the Total scale and subscales will be considered separately for each subscale and the Total scale. This external validation information includes correlations with respondent measures, comparisons of contrasted groups, and correlations with ratings by others. Related findings from the descriptive statistics, content validity data, and other researchers will be integrated where relevant to a scale's meaning. Then, general issues concerning the external validity of the SDF as a whole and across subscales will be addressed.

Work subscale. Correlations between work self-management effectiveness and related measures tended to support this subscale's construct validity. The correlation between Work self-management scores and personal evaluation scores was good although this finding was confounded by the apparent confusion regarding personal evaluation instructions. Work self-management tended to be moderately negatively correlated with counseling center clients' problem interference with academic performance and with living effectively (as measured by the Extent of Difficulties rating) and to be positively correlated with the ratings by significant others. The fact that this latter relationship was not strong probably reflects the limited observability of work behaviors to significant others recruited in this investigation.

The strongest external validation of this subscale was provided by (a) its positive correlation with concurrent and previous grades of technical school students and (b) the significant difference in Work self-management scores in the expected direction among the three collapsed

self-manager groups (presumed poor, average, and good self-managers). As predicted, correlations with grades for technical school students were much higher than those attained with the nursing school students. Presumably, these higher correlations were achieved because of the wider range of grades with the technical school students. Additional validation support was evidenced in the Work subscale's distribution of scores and descriptive statistics. This subscale had a distribution of scores which was wide-ranging and approximated a normal distribution. Work self-management tended to increase with educational level (either attained or in which engaged) and age up to 40 years. It is expected that work self-management skills would sharpen with increasing academic requirements and with maturity. However, the question raised by these relationships with educational level is whether the Work subscale measures self-management better among those with higher education and professional occupations than with skilled or unskilled occupations.

Two unexpected findings were evidenced with the counseling center clients' Extent of Difficulties ratings. One was that the How to Study group evidenced the lowest negative correlation (although significant) between Work self-management and interference with academic performance, and the Overcoming Student Stress group, the highest. However, these findings probably indicate different problem characteristics of each group. The university students who sought the stress group were, perhaps, experiencing greater stress interference with work habits. Those who sought the How to Study group may have been experiencing simpler difficulties with their work habits; may have already initiated modification of their work habits, i.e., had targeted their problem

behaviors and made a personal commitment to change by enrolling in the How to Study group; or were not yet aware of the impact of their study habits upon their academic performance. The other unexpected finding was that Work, rather than Total, scores had the strongest inverse relationship with interference by problems with living effectively. This finding may reflect the extremely important role university students' school functioning holds for their evaluation of their living effectiveness.

Results from the comparison of the six contrasted self-manager groups (track clubs and SOAs, with four counseling center groups) failed to support the construct validity of this subscale. Although no significant differences were found across groups, the individual counseling center clients had the lowest Work self-management scores of all samples included in this study. Furthermore, track club members and SOAs did achieve the highest Work scores of the six contrasted groups. The SOAs' lack of significantly higher Work scores may portray an actual interference with their potential for very effective work self-management by their heavy extracurricular involvement. Thus, the SOAs' pattern of subscale scores may reflect an imbalance in self-management application caused by their extracurricular emphasis: maintenance of higher than average Social and Leisure scores concommitantly with a relative neglect of work and significant neglect of health.

Absence of external validation support was also evidenced in the lack of corroboration of SOA Work scores by the SOA supervisor's ratings. These findings were unexpected in view of the narrowed definition of the work situation for this comparison and the high observability of SOAs' behavior to their supervisor. However, this lack of relationship can

readily be explained by (a) the effusively positive attitude of the supervisor toward all of her supervisees and the SOA program and (b) a limited range in Work self-management ratings by the SOAs and their supervisor.

Social subscale. The relationship between the Social subscale scores and external criteria was the weakest among all the scales. The poorest correlations between self-management scores and personal evaluation scores were consistently attained across samples with the Social subscale. There was virtually no relationship between self- and other-ratings of an individual's social behaviors, although this subscale's relationship to ratings by significant others should have been the strongest among the subscales. The anticipated relationship between SOA- and SOA supervisor-ratings was not achieved. Specification of the social situation for the social behavior items appeared to have improved this correlation from previous other-ratings, but not significantly. The Social subscale failed to discriminate presumed poor from good self-managers in the comparisons of the six contrasted groups and of the three collapsed self-manager groups. Particularly unexpected in the former comparison was the finding that SOA scores, although higher than the average score across samples, were not significantly so. It was assumed that SOAs, by virtue of their selection for the SOA program because of their superior social skills, would exhibit much stronger social self-management than "distressed" counseling center clients.

Another perplexing finding occurred with the counseling center Assertiveness Training group clients. Social self-management correlated positively with interference with living effectively due to assertiveness

problems. The converse was expected: As Social scores increased, less interference from assertiveness problems would occur with living effectively. This finding appears to indicate that engagement in the social behaviors represented in this scale may be related to difficulties with assertiveness. The correlation was nonsignificant with this small sample size, but raises cause for wonder.

Descriptive statistics offerred very little validation support for the Social subscale. No trend of increasing social self-management was found with increasing educational level as was the case with work and health self-management. However, such a trend was found with increasing age up to 40 years of age.

Related findings by Thomas (1983) have suggested some sensitivity of the Social subscale to social self-management and may explain part of the unanticipated findings with this subscale. The highest Social subscale scores in the present study were attained by the hospitalized patients which were included in Thomas' investigation. With this sample, Thomas found that Social self-management effectiveness increased significantly as health status decreased. She proposed that seriously ill individuals tended to score high in Social self-management because (a) they were "somewhat dependent upon significant others for either physical care or emotional support, or both," and, thus, "fearful of alienating these helpers" (p. 77); or (b) they over-emphasized the social sphere of their lives to the neglect of their health. Perhaps similar factors were operating with the distressed counseling center clients seeking a relationship with an emotional helper. Also, both emotionally and physically "distressed" samples may have tended to present themselves in a

good social light to salve self-appraisal so vulnerable to criticism at that particular time. Thus, the counseling center clients' Social scores were not significantly lower than those of the contrasted groups.

An additional unexpected finding in Thomas' research was that Social self-management effectiveness increased with social stress. Social stress, as measured by the Social Stress subscale from the Medical History Questionnaire (Brook et al., 1979), represents the current frequency of stressful life events such as interpersonal conflict, changes in work and home responsibilities, and death of family members. Perhaps the SDF Social subscale was sensitive to increased implementation of self-management strategies when the chains of smooth everyday activities were disrupted by health or social crisis.

Paradoxically, research with other health measures has produced results more as expected. Williams and Adcox (1983) found Social self-management to be positively related to Chronological Age minus Medical Age (r = .27, p = .05), as assessed by the Health Risk Index (Irons, 1982). In Williams and Habel's study (1984), Social self-management was negatively related to the frequency of general physical complaints not requiring extensive medical intervention (r = -.30, p = .05).

Problems with the construct validity of the Social subscale clearly exist. The lack of clear external validation is consistent with this scale's (a) poor internal reliability, (b) content validity problems as evidenced in its possibly eliciting socially desirable responding with limited variability, and (3) homogeneous spread and tendency toward higher scores in distribution of scores. The Social subscale appears to tap

behaviors which are highly value-laden, situationally specific, difficult to count objectively, and subject to different meanings for people.

Health subscale. The Health subscale achieved the greatest external validation of all the subscales. It demonstrated good correlations with personal evaluation scores--in fact, the best among the subscales for the nonstudents who received the special personal evaluation instructions (r = .68). The fact that there was a clear improvement in the Health correlation for this nonstudent sample lends some credence to this validation approach. Also, the Health subscale achieved a reasonably good fit between self- and other-ratings on health habits and discriminated consistently among presumed self-manager groups in both contrasted groups comparisons.

Health self-management was found to correlate positively and, as expected, to a lesser extent than Work self-management with technical school students' grades. This finding may reveal the theorized generalization of self-management to other life dimensions. It is noteworthy that grades were correlated with subscale scores in a pattern similar to that reflected with effective and ineffective self-manager groups. Grades were positively correlated with Work and Health scores, as noted previously, but not correlated with Social and Leisure scores (-.01 and -.003, respectively). Again, the construct validity of the Health and Work subscales, and not that of the Social and Leisure subscales, is supported.

Another strength of this subscale is that it appears to be the least subject to distortions from response styles or social desirability response set. The items, with the exception of "using hard drugs,"

elicited few questions. Good spread in distribution of responses was achieved with items except "using hard drugs" and "smoking cigarettes." The distribution of scores evidenced a wide spread approximating normality and the possible range of scores. The greater discreteness of the Health behaviors appears to have made them more countable.

A confusing finding was that all counseling center clients achieved higher Health self-management scores than the SOAs (and the individual and stress group clients, much higher). As previously considered, this finding may reflect a true neglect of health self-management by these orientation assistants in their heavy emphasis on orientation activities.

Additional support for the Health subscale as a measurement of health self-management has been afforded by findings with the samples in Thomas' 1983 study (World's Fair guests and general hospital patients, also included in this study). The lowest Health scores of all samples in this study were found, as expected, with the general hospital patients. Thomas found Health self-management (as well as Total self-management) to be positively correlated with health habits, health internal locus of control (The Multidimensional Health Locus of Control; Wallston, Wallston, and DeVallis, 1978), social support as evaluated by frequency of social contacts, and income (which was also positively correlated with attainment of college education). Also, Health self-management was negatively correlated with health Chance and Powerful Others loci of control (external loci of control), social stress, and two variables indicating less than college education. Trends in the present study's descriptive statistics corroborate Thomas' findings of increasing Health (and Total) self-management with increasing income, educational level, and health

status, with the exception of poor health (n = 7). Also in this study, Health self-management tended to increase with age up to 40 years of age.

Possible explanations for the trends with educational level and age support the Health subscale's construct validity. Perhaps individuals become more knowledgeable about good health habits as they become better educated and older. Their efforts to improve their health increase up to midlife--the time of awareness of vulnerability to aging and time of stabilization of so many habit patterns (work self-management, as well?).

Further relationship between Health subscale and criterion health measures has been evidenced in research by Williams and colleagues. They found that Health self-management effectiveness was positively related to Chronological Age minus Medical Age (r = .32, p = .05) (Williams & Adcox, 1983) and negatively related, although not significantly, to frequency of general physical complaints (r = -.23) (Williams & Habel, 1984).

Leisure subscale. Although the Leisure subscale demonstrated the best internal reliability of the subscales, it generally failed to relate to external criteria. Both contrasted group comparisons failed to demonstrate this subscale's potential to discriminate between poor and good self-managers. Leisure subscale scores were positively correlated with problem interference with academic performance and living effectively with the counseling center stress group. An explanation for this finding may be that an increased Leisure score for the counseling center population indicates over-extending oneself in leisuretime commitments to the neglect of other areas. Relevant to this explanation is the finding

that the negative Work item regarding over-extending oneself was more positively related to the Leisure subscale scores. A Leisure score in the mid-range or in balance with other self-management realms may be a better index of good leisure self-management than a high score.

The only positive findings with this subscale were its strong relationship with personal evaluation scores and the corroboration of ratings by significant others. More involvement in leisuretime activities tended to contribute to positive feelings about oneself, to be quite observable to others, and probably to be less value-laden than participation in behaviors in other self-management realms.

Further evidence of problems with the content validity, and by inference the construct validity, of the Leisure subscale has been provided in Thomas' related research (1983). Thomas found that higher income was positively correlated with Leisure self-management. This finding further indicates that this subscale may tap a limited sphere of leisure activities. It may represent a preponderance of leisure activities which cost more and/or are engaged in more frequently by individuals with a higher education level (a variable positively related to income in Thomas' study). Theoretically, one should not be required to spend more money or have a college degree to manage one's leisure effectively! However, higher income individuals may indeed engage in a greater variety and quantity of leisure activities.

Total scale. It is difficult to determine whether the Total scale's relationship with external criteria portrays the external validity of the Total scale or a strong subscale. The Total score, because it is linearly summative of the subscale scores, may reflect the effect of one strong

subscale rather than a comprehensive self-management effect. This possibility must be considered with (a) the significant difference found among Total scale scores in both contrasted group comparisons, (b) the positive correlations between Total scores and other-ratings and technical school students' grades, and (c) the negative correlations with problem interference with academic performance for counseling center individual and stress group clients. In all instances, a subscale achieved stronger correlations than the Total scale. Furthermore, in the counseling center comparisons, no relationship was found with problem interference with living effectively as was expected for Total self-management, and as was unexpectedly found for Work self-management of stress group clients. However, an explanation for these counseling center findings is that the distress experienced by the individual and stress group clients was, indeed, affected by their comprehensive self-management effectivness, but moreso by their work self-management effectiveness, i.e., by their management of school, the priority realm for a student. A subscale effect might also have been operating in Thomas' (1983) self-management correlations which were good with Total self-management, but better with Health self-management.

Limited evidence that comprehensive self-management is being measured may be seen in findings with the How to Study group. A stronger relationship with Total, rather than Work, self-management was evidenced in the correlations with problem interference with living effectively. For this stronger relationship to occur with this group, with which it was expected that work self-management would have a stronger influence

on living effectiveness, seems to evidence the operation of a broader psychological construct.

Further evidence of broad-spectrum self-management effectiveness is found in research reported by Williams and Philp (1984). They found Total self-management to be more strongly related (r = .23, p = .10) to job performance of industrial employees than Work self-management (r = .12, p = .38). However, the Total scale correlation was considered only suggestive of compatibility between self-management and job performance because of the low significance level. Their research also indicated that Total self-management was negatively correlated (r = -.28, p = .05) with Type A behavior patterns as measured by the Jenkins Activity Survey (Jenkins et al., 1979). This finding implies that Type A characteristics are somewhat incompatible with effective comprehensive self-management presumably measured by the SDF.

General issues. Although personal evaluation results could not be considered with great confidence, there was adequate evidence to support continued concurrent validation efforts in a similar direction. Personal evaluation score correlations with self-management scores did suggest stronger and weaker subscales. Correlations were poorest for the subscale with the least validation support, i.e., the Social subscale. Correlations varied considerably on certain subscales (Social and Health), and not the others, by differing samples. Also, clearer personal evaluation instructions appear to have improved correlations with Health scores of the nonstudent sample in comparison with the initial SDF study. Findings from this study suggest that if difficulties with the personal evaluation measure can be remedied, it may be learned that the

relationship between self-management effectiveness and personal evaluation (a) differs with different populations and with different subscales (or areas of self-management) and (b) is much stronger than currently indicated.

Whether or not a revised personal evaluation measure is used, further research is warranted to ascertain the relationship between self-management effectiveness and an index of happiness or the qualitative experience of life. In associated research, Watkins (1984) found significant positive correlations between social interest and self-management effectiveness. Social interest, according to Watkins, involves a feeling of identification or "kinship with humanity and a desire to contribute to the community at large" (p. 2) and "would seem to be a consequence of a basic and rudimentary positive experience of self" (p. 4). Watkins found social interest in the area of social relationships related to Social self-management effectiveness (r =.26, p = .0002) and in the area of work, related to Work self-management effectiveness (r =.21, p = .003). Overall social interest was correlated with all areas of self-management, i.e, Total (r = .49, p = .0001), Work (r = .30, p = .0001), Social (r = .39, p = .0001), Health (r = .33, p = .0001), and Leisure (r = .33, p = .0001). Social interest has also been found to be positively associated with psychological well-being and life adjustment (Zarski, Bubenzer, & West, 1981, cited in Watkins, 1984). Thus, the relationship between self-management effectiveness and social interest represents correlation with a positive qualitative experience of life. The fact that Total self-management evidenced a higher correlation than focused realms also underscores what self-management theory assumes:

Lifestyle self-management enhances quality of life (Thoresen, 1983; Williams & Long, 1983).

Although the comparison of the six contrasted groups failed to support the SDF's potential to discriminate poor and good self-managers, except in the health realm, those results may not be as unexpected as they first seem. One possible explanation for these findings is that distressed students who were counseling center participants may have actually been managing their lives fairly effectively. Fair self-management might have been reflected in their ability to remain enrolled in school and to seek counseling center assistance. Thus, all but the individual clients might not have been "distressed" enough to reflect a sharp deterioration in self-management effectiveness. Another possibility is that the SOAs and track club members were falsely assumed to be effective self-managers across dimensions. In reality, both groups might have typified self-management focused in special interest areas, i.e., unbalanced self-management application. Hence, differences in balance of subscale scores would be expected and were found with these two samples. The implication is that careful scrutiny is needed in future selection of contrasted groups.

Additional validation support for the SDF Total scale and subscales can be found in the descriptive statistics for certain demographic groupings. Consistent with Humphrey's (1982), Rosenbaum's (1980), and Kendall and Wilcox's (1979) research findings with their self-management assessments, females obtained slightly higher scores than males. In this study, self-management effectiveness across dimensions tended to increase with age. Similarly to Thomas' (1983) findings on Total and Health

self-management by those with less than a high school education, the lowest pattern of scores in this study (with the exception of Social self-management) was obtained by those with less than a high school education.

One problem limiting the external validity of the SDF may be shared by many self-report assessments. Subjects' responses might have reflected the effect of current conditions prevailing over prior experiences or over what is typical, e.g., the effect of present mood or a recent event, rather than typical moods or events (Kendall & Williams, 1982). This possibility is underscored by the greater self- and other-ratings' agreement on subscales comprised of more discrete, observable behaviors, i.e., the Health and Leisure behaviors. These behaviors are probably more amenable to definition and count by both the individual and his or her intimate in terms of what is typical over a period of time. Consistent with this explanation, the behaviors which could be most affected by a current personal situation--social behaviors--were the least related to ratings by others. This relationship was the poorest although the social behaviors should have been the most observable to the intimate other. In like manner, the Work subscale's ratings (with the next to worst correlations with other-ratings) might have been easily affected by a current work crisis and not representative of an individual's work-related behaviors over time.

Another problem with self-report inventories such as the SDF is variation in validity for subgroups with different personal characteristics (Anastasi, 1976). The personal characteristic serves as a moderator variable because it moderates the validity of the test

(Saunders, 1956, cited in Anastasi, 1976). A finding that may have relevance for the SDF's validity is Fulkerson's (1959) work which found that self-report personality inventories might have higher validity for some types of neurotics than others. The moderator variable he examined was the dimension of extraversion-introversion, or hysteria-psychasthenia, a factor posed by Eysenck (1957) as reflecting type of adjustment. An individual characterized by one type of neuroticism (introvert, or psychasthenic) tends to be careful and accurate in self-report; by the other type (extravert, or hysteric) to be careless, impulsive, and evasive and to avoid the expression of unpleasant thoughts or emotions. Thus, the SDF may not serve as a valid predictor for the poorly self-managed who would tend to fall into the latter category and obtain higher scores than the more accurately scoring neurotics.

The question must be addressed whether the SDF promises to measure broad-spectrum self-management effectiveness rather than living effectively in four different areas. The first piece of evidence in support of the SDF as a potential measure of actual self-management effectiveness, rather than living effectively, lies in the construct validation with the subscales. This study has provided construct validity support which is (a) strong for the Health and Work subscales; (b) albeit limited for the Social subscale, sufficient for retention of the scale by virtue of internal consistency achieved; and (c) promising for the Leisure subscale if the content validity weaknesses are remedied. The second aspect of proof is the attainment by the Total scale of modest internal reliability and a few correlations with external criteria which were as strong as, or stronger, than those attained by other subscales. The Total

scale's internal consistency reliability indicates that administration of the Total scale will yield results more representative than results from any one subscale. A third source of evidence is that the factor analysis produced factor loading clusters reasonably aligned with three subscales. Final support for broad-spectrum and underlying self-management constructs lies with the appealing, but inconclusive, possibility that balance of subscale scores is as important as their values.

Conclusions

The Self-description Form has provided scores which are quite temporally consistent for a self-report behavior assessment and internally consistent for a newly developed and logically derived instrument. Psychometric evidence converged to provide initial support for retention of the Total scale and all subscales and for continued instrument validation and development efforts. A major finding in this study was that logical derivation has provided this instrument an excellent beginning for the next stages of scale construction. According to Nunnally (1978), initiation of test construction guided by theory is far more useful than by a "polyglot collection of items to be factor-analyzed in the hope of obtaining important measures of human attributes" (p. 277). This psychometric examination should represent the foundation for more extensive investigation and empirical derivation combined with a rational approach in instrument development (Henrysson, 1971; Nunnally, 1978).

Major Strengths and Weaknesses

The Health subscale emerged as generally the most valid of the SDF subscales. It was the most useful in discriminating presumed effective

and ineffective self-managers in both contrasted group comparisons and in the related research by Thomas (1983). This subscale's correlation with the Total scale was the highest of the subscales; its score distribution, the most wide-ranging, almost approximating the possible range; its test-retest reliability, the best; its level of agreement between self- and other-ratings, the highest of the subscales; and its correlations with relevant criterion measures, the most consistent.

The Work subscale was the next strongest psychometrically. It, too, clearly distinguished the three differing collapsed self-manager groups (although not the six contrasted groups), strongly related to the Total scores, and had a wide-ranging score distribution. This subscale's temporal reliability was reasonable; its internal reliability, the best of the subscales, with the exception of Leisure; and its external validation, good by positive correlation with technical school students' grades and inverse correlation with problem interference in academic performance of counseling center clients.

The utility of the Social and Leisure subscales is highly questionable at this point. Neither sampling of behaviors discriminated among the contrasted groups, clients with variation in "extent of difficulties," or technical students with variation in grades. Serious measurement problems with the Social subscale are further suggested by its (a) total lack of agreement between self- and other-ratings, (b) poorest test-retest and internal consistency reliabilities, (c) possible tendency to elicit responses in a socially desirable manner and with limited variability, and (d) unpredictable response patterns, e.g., evidencing high scores with the general hospital patients and a possible positive

relationship with assertiveness problems. The situational specificity, behavioral ambiguity, and value-ladenness of the Social subscale's behaviors appear to be significant contributors to the measurement problems.

The strengths of the Leisure subscale were that it was the most internally reliable of the subscales, had good test-retest reliability and strong self-other agreement in ratings, and is most likely measuring an aspect of leisure self-management. Although the Leisure subscales showed these strengths, it does not adequately represent the leisure self-management domain. Among the subscales, it held the poorest correlation with Total scale scores, the most homogeneous score distribution, and the most suspect content validity to respondents.

The SDF has demonstrated several further strengths. It was relatively easy and straightforward for an examiner or respondent to administer and score. With the exception of the Value column, directions were generally clear. Only a short time for completion and scoring was required. Needs for examiner qualifications and training were limited. A final important strength was the SDF's almost undisputed face validity as attested to by respondents' views of the SDF as meaningful and helpful.

Recommendations and Implications for Future Research

Future stages of instrument development and validation are recommended in this section. These stages are based on the premises that (a) the logical derivation approach used in construction of the SDF has provided an excellent initiation of instrument development and (b) further development would most usefully incorporate an empirical derivation approach guided by self-management theory and reason (Henrysson, 1971;

Nunnally, 1978). Thus, the recommended stages are, in the following order: several initial revisions of the SDF, controlled correlational and experimental studies with the revised SDF with a particular focus on examination of the weaker Social and Leisure subscales, and pursuant instrument development.

Stage I. Immediate SDF revisions. The following minor revisions are recommended for implementation prior to any further research with the SDF:

1. Revise the method of eliciting the personal evaluation. Having this evaluation constitute a separate measure with format and instructions revised for greater clarity is encouraged. A different format might simply ask the respondent, "Are you satisfied with your level of participation with this behavior? Yes No Indifferent" or "How satisfied are you with how often you engage in .....?" On a 0-to-4 point scale (Not at all to A great deal).

2. Delete all social desirability and filler items. Another scale assessing a social desirability response set, e.g., the Marlowe-Crowne Social Desirability Index (Crowne & Marlowe, 1960), might be administered with the SDF. Another possibility would be to retain as social desirability items those SDF items which correlate with the Marlowe-Crowne Social Desirability Index.

3. Include the last SDF items on the front side of a page.

4. Place Item 50, "engaging in a hobby not otherwise listed in questionnaire," after the last listed hobby.

5. Redefine the Levels of Participation to set a more discrete criterion frequency for each value, e.g., "several times a week" rather

than Regularly. Specify the frequency levels in the column headings.

6. Substitute "work" or "occupational" for "professional" in the first sentence of SDF instructions ("In the course of your personal and professional [work] activities each week....").

7. Include instructions for students and homemakers that school and homemaking are considered their work or occupation referred to in the work-related items, e.g., "In the course of your work activities, including at school and in the home, each week...."

8. Reword certain self-management items for greater clarity and applicability for differing populations, i.e., "filing work materials" (for example, "putting away work materials"), "reprimanding others" (for example, "telling off others"), and "jumping from one task to another" (for example, "jumping to a new task before completing the present one").

Stage II. Further research with the revised SDF. Continued psychometric examination of the revised SDF should be conducted in further test-retest reliability and validation studies by method of internal consistency and against external criteria. Although the Social and Leisure subscales clearly require revision, further studies are necessary to clarify revisions needed. The following specific research directions are recommended:

1. Studies focusing on the Social subscale with (a) provision of clearer social situation specificity, e.g., exclusion of relationships with children; and (b) naturalistic behavioral observation, perhaps in a self-contained environment, such as in an adult psychiatric inpatient, daycare, or foster home facility; and/or subject's monitoring his or her own social behaviors.

2. Studies focusing on the Leisure subscale with contrasted groups of presumed poor and good leisure self-managers, e.g., presumed "workaholics" versus members of organized recreational groups or programs.

3. Further comparisons with more clearly contrasted groups. Groups must be selected with careful scrutiny of the particular realm(s) of self-management their behaviors presumably represent. Groups might include (a) more "distressed" populations, such as psychiatric patients who are more distressed than the counseling center clients; (b) poorly self-managed prior to entering an intervention program, e.g., migrant worker participants who are poorly self-managed upon admission to a residential GED-preparation program; (c) effective self-managers as viewed by coworkers, such as teachers rated by fellow teachers and/or supervisors; (d) poor and well self-managed unskilled and skilled workers and homemakers; and (e) assertive and nonassertive populations.

4. Cross-validation with a variety of other samples to determine the factor structure across samples (Magnusson, 1967). Assessment of more nonprofessional respondents, such as skilled and unskilled workers and homemakers, would allow further examination of the representativeness of the Work items.

5. Further correlations with ratings by significant others in the respondent's personal life and work setting, such as "intimates" and more objective supervisors and coworkers.

6. Correlational studies comparing self-management effectiveness with other self-management measures, e.g., measuring use of covert self-management strategies, such as by Rosenbaum's Self-Control Schedule (1980).

7. Controlled experimental studies to determine sensitivity of the revised SDF or individual items to treatment-induced change. Particularly valuable would be comparison of (a) changes facilitated by self-management interventions or treatment programs, chemotherapy, behavior modification programs, and no treatment; and (b) differences in SDF score patterns between treatment successes and failures and at different stages of crisis and self-management implementation (differences suggested by the high Social self-management scores of the "distressed" populations and high Leisure scores of counseling center stress group clients).

8. Examination of the SDF's responsivity to current conditions rather than to what is typical, such as by obtaining concurrent ratings by the respondent and naturalistic observers of current crises and emotional state.

9. Correlations with a revised personal evaluation or an index of quality of life, happiness, or physical and emotional wellbeing, i.e, some index of living effectiveness or satisfaction with living effectiveness.

10. Correlation with a measure of neuroticism, such as the MMPI, or of personal characteristics of impulsiveness and carefulness, such as the 16 PF (Cattell, Eber, & Tatsuoka, 1970) or the McKinney Reporting Test used by Fulkerson (1959), to determine if neurotic personal characteristics are operating as a moderator variable with SDF scores.

11. Further temporal reliability studies with varied nonstudent populations.

12. Further internal consistency reliability assessment, item analyses, and factor analysis to determine which items are strongest by method of internal consistency and external validation.

13. An even more systematic analysis of response patterns and respondent verbal and written feedback, again in examination of the SDF's face validity and circumstantial evidence regarding content validity. The last two research directions are particularly basic to further instrument development.

Stage III. Further instrument development. Steps in further instrument development of the SDF incorporate those recommended by Henrysson (1971), Nunnally, Jr. (1970), Nunnally, (1978), and Tabachnick and Fidell (1983) and by the findings of this study. These steps are as follows:

1. Retain items which have proved to be externally valid and to contribute to the homogeneity of their subscale and the Total scale. Magnusson (1967) recommended selection of items which meet both criteria nearly equally. Anastasi (1976) has suggested that a compromise between item validity and internal consistency can be struck by segregating the retained items into separate homogeneous subtests. Further studies are needed to substantiate the validity of the SDF subscales as currently conceptualized and to determine which items contribute the most to the internal reliability of their home subscale and are the most externally valid.

2. Generate new items guided by self-management theory. Expansion in the number of items per subscale will probably be necessary to improve the SDF's internal consistency reliability. One source of new items would be those which were discarded in selection of items for the original inventory. Many discarded items attained high judgement agreement regarding contribution to effective living and direction, but not category

placement. Those items might be reconsidered if subscale restructuring becomes necessary.

3. Most likely, the Leisure subscale will require revision to improve its content validity. Additional representative behaviors might include games or activities with the immediate family, socializing or visiting with friends, visiting family, watching television, going on vacation trips, and attending sports events, e.g., football, basketball or baseball games. An alternate revision might be to generate leisure items representing qualitative leisure experiences (Meara, 1985), e.g., engaging in nondestructive "want" activities (versus "should") activities, as similarly evaluated in Marlatt and Parks' (1982) lifestyle assessment.

4. If serious measurement problems continue with the Social subscale, consider complete revision to all positively directed behaviors or to a completely different format or assessment approach. An appropriately revised Social subscale might not necessarily be equivalent to the other subscales. Rather than an assessment only of frequencies of relating behaviors, perhaps a more adequate assessment would at least include critical social support qualities, such as exchange of intimate communications and experience of solidarity and trust (Greenblatt, Becerra, & Serafetinides, 1982; Pearlin, Menaghan, Lieberman, & Mullen, 1981; Poritt, 1979; Thomas, 1983). Additional items representing relationship quality might include behaviors of support reciprocity, e.g., offering and seeking advice or guidance, material and physical aid, feedback about self, self-disclosure, and social participation in something fun or relaxing. These behaviors are derived from the support functions incorporated in Manuel Berrera, Jr.'s ASSIS (Arizona Social

Support Interview Schedule, 1981), a procedure designed for identifying support network membership.

5. Administer new items to samples of subjects representative of groups for whom the SDF is intended. Then submit their responses to item analyses.

6. Evaluate the appropriateness of format and instruction changes. Revision possibilities which should be examined include (a) writing all items in a positive direction if responses to positive items again reflect a better spread in distribution and better correlations with subscale and Total scale; (b) incorporating a seven-point scale for the frequency levels for example, Never, Yearly, Monthly, Weekly, Daily, A few times daily, and Many times daily; (c) providing instructions to the respondent to attempt to respond to items in terms of what is typical, rather than by influence of a recent event, crisis, or change; and (d) instructing for specification of the social situation, such as restriction to social and intimate adult relationships. However, social situation specification may not be necessary with the inclusion of items related to relationship quality.

7. Revise the SDF with item, format, and instruction changes.

8. Submit the revised SDF to further controlled correlational and experimental studies.

Final Comments

In conclusion, the SDF has shown good potential to become a valid and reliable measure of comprehensive self-management with at least three, possibly four, different underlying dimensions. It appears quite useful

to quantify self-management effectiveness in terms of critical behaviors representing end products of self-management across major life dimensions.

Obviously, a great deal of work remains in the development of the SDF. However, the SDF's psychometric properties appear quite sufficient to warrant continued research directed toward strengthening it. The SDF holds promise for being developed into a psychometrically sound, cost-efficient assessment useful in self-management and health psychology research. A future use may also be as an assessment tool facilitating the counseling process with a total wellness or "self-management as lifestyle" orientation.

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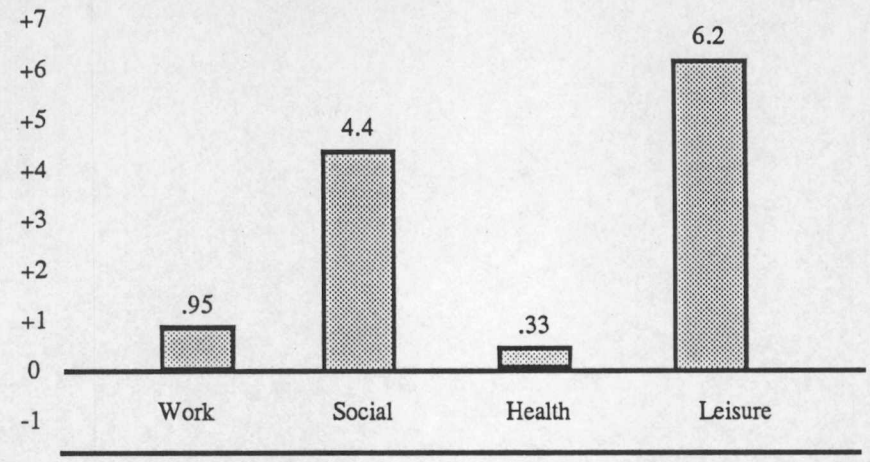
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APPENDIXES

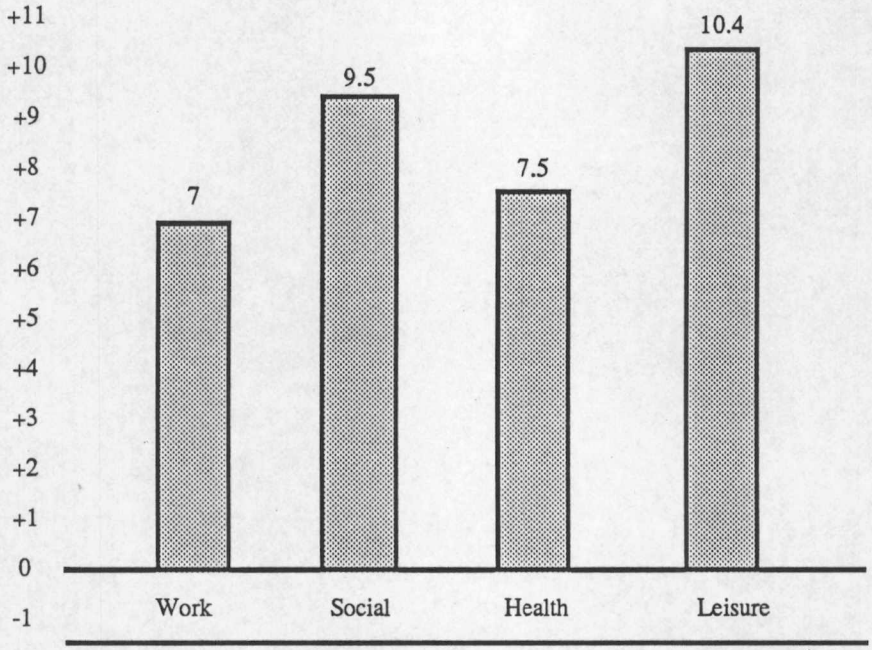
APPENDIX A

PATTERN OF SUBSCALE MEANS FOR HIGH AND LOW SELF-MANAGEMENT SCORERS

INITIAL STUDY



Low Self-management Scorers (n = 40)



High Self-management Scorers (n= 39)

Low self-management scorers were individuals scoring at least one standard deviation below the total mean; high self-management scorers, individuals scoring at least one standard deviation above the total mean. Total N = 214.

Figure A-1. Pattern of Subscale Means for High and Low Self-management Scorers: Initial Study

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Source : Thomas, S. P., Williams, R. L., & Olsen, D. A. (1982, March). The development of a naturalistic self-management inventory. Paper presented at the annual meeting of the American Educational Research Association, New York.

APPENDIX B

PERCENTAGE OF AGREEMENT ON DIRECTION AND PLACEMENT OF ITEMS IN THE SELF-DESCRIPTION FORM

Table B-1

Percentage of Agreement on Direction and Placement of Items in the Self-description Form

Work Subscale

Positive Items			Negative Items		
Item	Direction	Placement	Item	Direction	Placement
2. Filing work materials	.79	.98	7. Over-extending myself in work commitments	.93	.95
13. Attaining work goals	.98	.98	19. Jumping from one task to another	.91	.88
24. Completing work assignments on time	.96	.98	30. Putting off unpleasant, but necessary, tasks	.91	.80
36. Setting work goals	.98	1.00	41. Losing work related	.98	1.00
47. Reading course/professionally related materials	.84	.80	53. Failing to meet deadlines	.95	.96
	$\bar{V}$ = .91	$\bar{P}$ = .95		$\bar{V}$ = .94	$\bar{P}$ = .92

Social Subscale

8. Keeping my word	.98	.80	3. Rambling in conversation	.89	.84
20. Initiating conversation	.98	.85	14. Criticizing others behind their back	.76	.82
31. Listening closely to others' comments	.98	.81	25. Interrupting others during conversation	.84	.89
42. Encouraging others	.93	.80	48. Reprimanding others	.80	.95
54. Showing affection toward others	.88	.80		$\bar{V}$ = .86	$\bar{P}$ = .89
	$\bar{V}$ = .95	$\bar{P}$ = .81			

Table B-1 (Continued)

Health Subscale				
Positive Items			Negative Items	
Item	Direction	Placement	Item	Direction	Placement
4. Flossing my teeth	.76	1.00	9. Using hard drugs	.98	.56
15. Getting adequate rest at night	.93	.89	21. Eating excessively	.98	.91
26. Participating in vigorous physical exercise	.78	.75	32. Smoking cigarettes	.89	.89
38. Drinking water	.80	.93	43. Eating junk food	.73	.90
49. Doing stretching exercises	.73	.77	55. Gulping meals	.80	.95
	$\bar{V}$ = .80	$\bar{P}$ = .87		$\bar{V}$ = .88	$\bar{P}$ = .84

Leisure Subscale (all positive items)					
5. Creating art objects	.80	1.00	33. Reading leisurely (e.g., poetry, fiction, magazines)	.74	.83
10. Attending art and cultural exhibits	.85	1.00	39. Gardening/working in the yard	.80	.87
16. Playing a musical instrument	.84	1.00	44. Engaging in outdoor nature activities	.85	.81
22. Attending concerts	.80	1.00	50. Engaging in a hobby not otherwise listed in questionnaire	.95	1.00
27. Writing creatively (e.g., poetry, short stories)	.85	.95	56. Dancing	.85	.72
			(all items)	$\bar{V}$ = .83	$\bar{P}$ = .92

Source : Thomas, S. P., Williams, R. L., & Olsen, D. A. (1982, March). The development of a naturalistic self-management inventory. Paper presented at the annual meeting of the American Educational Research Association, New York.

APPENDIX C

SAMPLE PACKET OF RESPONDENT FORMS

INFORMED CONSENT STATEMENT [a]

I understand that the purpose of this study is to develop a more comprehensive picture of personal perceptions and life-style characteristics of adults in this area. I have been informed that I will take a series of paper and pencil inventories dealing with my perceptions of how personal changes are achieved and my personal characteristics (e.g., behaviors, mood states, health factors). However, I have been informed that I need not sign my name to any of the inventories and that my responses will be held in the strictest confidence. I also understand that I can withdraw from participation at any point without penalty. If I have any further questions regarding my participation in the study, I will have the option of contacting the experimenter at the address and phone number listed below.

Name_____

Date_____

Damaris Olsen Young
Doctoral Candidate, Counseling Psychology
Department of Educational and Counseling Psychology
108 Claxton Education Building
The University of Tennessee
Knoxville, Tennessee 37916 (615-974-5131)

INFORMED CONSENT STATEMENT [b]

I understand that the purpose of this study is to develop a more comprehensive picture of personal perceptions and life-style characteristics of adults in this area. I have been informed that I will take a series of paper and pencil inventories dealing with my perceptions of how personal changes are achieved and my personal characteristics (e.g., behaviors, mood states, health factors). I grant my permission for the researcher to obtain and use my class grade for the purpose only of comparison with my life-style characteristics. However, I have been informed that I need not sign my name to any of the inventories and that my responses and class grade will be held in the strictest confidence. I also understand that I can withdraw from participation at any point without penalty. If I have any further questions regarding my participation in the study, I will have the option of contacting the experimenter at the address and phone number listed below.

Name_____

Date_____

Damaris Olsen Young
Doctoral Candidate, Counseling Psychology
Department of Educational and Counseling Psychology
108 Claxton Education Building
The University of Tennessee
Knoxville, Tennessee 37916 (615-974-5131)

Identification No._____

Self-Description Form

In the course of your personal and professional activities each week, you probably engage in many different behaviors. We want you to indicate how frequently you engage in each of the behaviors listed below by using the following distinctions.

Never - Under no circumstances do you ever engage in the behavior.

Rarely - You engage in the behavior a few times a year.

Periodically - You engage in the behavior a few times a month.

Regularly - You engage in the behavior several times a week.

Always - You engage in the behavior every time an opportunity presents itself.

CIRCLE the number in the column that BEST corresponds to your level of participation in each behavior.

We would also like for you to indicate how your level of participation, or nonparticipation, in each behavior (ranging from never to always) makes you feel about yourself. If your level of participation contributes to good feelings about yourself, circle the + in the column labeled "Value"; if your level of participation contributes to bad feelings, circle the - in the "Value" column; and if your level of participation has no effect on the way you feel about yourself, circle the 0 in the "Value" column. For example, if your "regularly" drinking coffee

a) contributes to good feelings about yourself, put this: - 0 ⊕
b) contributes to bad feelings about yourself, put this: ⊖ 0 +
c) has no effect on the way you feel about yourself, put this: - ⓪ +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
1. Drinking coffee	0	1	2	3	4	- 0 +
2. Filing work materials	0	1	2	3	4	- 0 +
3. Rambling in conversation	0	1	2	3	4	- 0 +
4. Flossing my teeth	0	1	2	3	4	- 0 +
5. Creating art objects	0	1	2	3	4	- 0 +
6. Speaking softly	0	1	2	3	4	- 0 +
7. Over-extending myself in work commitments	0	1	2	3	4	- 0 +
8. Keeping my word	0	1	2	3	4	- 0 +
9. Using hard drugs	0	1	2	3	4	- 0 +
10. Attending art and cultural exhibits	0	1	2	3	4	- 0 +
11. Donating to all good causes	0	1	2	3	4	- 0 +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
12. Going to bed early	0	1	2	3	4	- 0 +
13. Attaining work goals	0	1	2	3	4	- 0 +
14. Criticizing others behind their back	0	1	2	3	4	- 0 +
15. Getting adequate rest at night	0	1	2	3	4	- 0 +
16. Playing a musical instrument	0	1	2	3	4	- 0 +
17. Aiding stranded motorists on the interstate	0	1	2	3	4	- 0 +
18. Whistling	0	1	2	3	4	- 0 +
19. Jumping from one task to another	0	1	2	3	4	- 0 +
20. Initiating conversation	0	1	2	3	4	- 0 +
21. Eating excessively	0	1	2	3	4	- 0 +
22. Attending concerts	0	1	2	3	4	- 0 +
23. Yawning	0	1	2	3	4	- 0 +
24. Completing work assignments on time	0	1	2	3	4	- 0 +
25. Interrupting others during conversation	0	1	2	3	4	- 0 +
26. Participating in vigorous physical activity	0	1	2	3	4	- 0 +
27. Writing creatively (e.g., poetry, short stories)	0	1	2	3	4	- 0 +
28. Eating only nutritious food	0	1	2	3	4	- 0 +
29. Drinking tea	0	1	2	3	4	- 0 +
30. Putting off unpleasant, but necessary, tasks	0	1	2	3	4	- 0 +
31. Listening closely to others' comments	0	1	2	3	4	- 0 +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
32. Smoking cigarettes	0	1	2	3	4	- 0 +
33. Reading leisurely (e.g., poetry, fiction, magazines)	0	1	2	3	4	- 0 +
34. Helping anyone needing help	0	1	2	3	4	- 0 +
35. Crossing legs	0	1	2	3	4	- 0 +
36. Setting work goals	0	1	2	3	4	- 0 +
37. Dominating conversation	0	1	2	3	4	- 0 +
38. Drinking water	0	1	2	3	4	- 0 +
39. Gardening/working in the yard	0	1	2	3	4	- 0 +
40. Doodling on paper	0	1	2	3	4	- 0 +
41. Losing work related materials	0	1	2	3	4	- 0 +
42. Encouraging others	0	1	2	3	4	- 0 +
43. Eating junk food	0	1	2	3	4	- 0 +
44. Engaging in outdoor nature activities	0	1	2	3	4	- 0 +
45. Exercising more than twice a day	0	1	2	3	4	- 0 +
46. Shifting feet	0	1	2	3	4	- 0 +
47. Reading course/professionally related materials	0	1	2	3	4	- 0 +
48. Reprimanding others	0	1	2	3	4	- 0 +
49. Doing stretching exercises	0	1	2	3	4	- 0 +
50. Engaging in a hobby not otherwise listed in questionnaire	0	1	2	3	4	- 0 +
51. Stopping a mugging	0	1	2	3	4	- 0 +
52. Watching movies on TV	0	1	2	3	4	- 0 +
53. Failing to meet deadlines	0	1	2	3	4	- 0 +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
54. Showing affection toward others	0	1	2	3	4	- 0 +
55. Gulping meals	0	1	2	3	4	- 0 +
56. Dancing	0	1	2	3	4	- 0 +

ID No._____

Demographic Survey

The following questions are designed to give us some basic life situation information on persons taking our survey. Please circle the number corresponding to the answer most descriptive of you under each question, and please answer all questions. Thank you.

1. What is your sex:
   1. Female
   2. Male

2. What is your age?_____

3. Marital status?
   1. never married
   2. married
   3. divorced/separated
   4. widowed

4. Educational level attained?
   1. less than high school
   2. high school graduate or GED
   3. technical/vocational school
   4. BS/BA
   5. MS/MA
   6. EdD/PhD/MD/JD

5. Employment status?
   1. not currently employed
   2. employed full time
   3. employed part time

6. Occupational status?
   1. unskilled labor
   2. skilled labor or trade
   3. supervisory
   4. managerial
   5. professional
   6. clerical
   7. military
   8. sales
   9. homemaker
   10. other

7. Personal income level?
   1. $5,000 yr or less
   2. $5,000 to $10,000
   3. $10,000 to $15,000
   4. $15,000 to $25,000
   5. $25,000+

8. Religious involvement?
   1. None, no belief in higher power
   2. belief in higher power
   3. belief in higher power, some institutional involvement
   4. belief in higher power, regular institutional involvement

9. Health status?
   1. excellent
   2. good
   3. fair
   4. poor

10. Number of hospitalizations past 5 years?
   1. 0
   2. 1-4
   3. 5-10
   4. 10+

11. Number of visits to physician in past year?
   1. 0
   2. 1-3
   3. 3-5
   4. 5+

12. Student status?
   1. not a student
   2. high school
   3. technical/vocational training
   4. college freshman/sophomore
   5. college junior/senior
   6. graduate or professional school

EXTENT OF DIFFICULTIES ID NO._____

On the scale below, circle the number which best describes how much your difficulties interfere with your academic performance.

0	1	2	3	4	5	6	7	8	9	10
NONE										A GREAT DEAL

On the scale below, circle the number which best describes how much your difficulties interfere with your living effectively.

0	1	2	3	4	5	6	7	8	9	10
NONE										A GREAT DEAL

APPENDIX D

SUMMARY OF ADMINISTRATION PROCEDURES, RESEARCHERS,

AND DATA COLLECTORS

Table D-1

Summary of Administration Procedures, Researchers, and Data Collectors

Sample	n	Researchers	Data Collectors
Group Administration with Special Instructions (N = 753)			
University Remedial Freshmen and Sophomores	38	Damaris Olsen Young	Self-management Research Group (SMR)[a]
University Upperclassmen	84	Young	SMR
Graduate Students	84	Young	SMR
State Technical School Students	219	Young	Young
Community College Study Skills Class	17	Young	Dave Ferguson
SOAs	43	Young	Young
University Alumnae	134	Young	Young
Oak Ridge Track Club	38	Young	Young
Knoxville Association of Women Executives and Federally Employed Women	34	Young	Young and Sandra P. Thomas
Learning Styles Project Teachers	12	Young	Young
Clerical and Associate Degree Occupational Workers	45	Young	Young
Additional Nonremedial Freshmen and Sophomores	5	Young	Young
Group Administration without Special Instructions (N = 332)			
University Remedial Freshmen and Sophomores	48	Thomas, Williams, & Olsen, 1982; Young	SMR
University Upperclassmen	60	Thomas et al., 1982 Young	SMR

Table D-1 (Continued)

Sample	n	Researchers	Data Collectors
Graduate Students	59	Thomas et al., 1982 Young	SMR
One Electrical Engineering Technical School Class	20	Young	Young
Nursing School Students	80	Thomas et al., 1982	SMR
Knoxville Track Club	16	Young	Young
Canoe Club Members	29	Young	Young
Hospital Employees	20	Young	Young
Individual Administration without Special Instructions (N = 552)			
Counseling Center Clients	179	Young	Counseling center counselors[b] and Young
World's Fair Guests	176	Thomas, 1983	Thomas
TVA Managers	16	Young	Young
KAWE Spouses	3	Thomas, 1983	Thomas
General Hospital Patients	89	Thomas, 1983	Thomas
Nigerian College Students	89	Hector, 1984	Hector

Note. Samples which received "instructions" were provided verbal guidance by an experimenter through potential responses to the first behavior item, "drinking coffee" (actually a filler item). The example responses were given to clarify particularly the Value column response procedure.

[a]Self-management Research Group members who served as data collectors included Dr. Robert L. Williams, Dr. Mark A. Hector, Damaris Olsen Young, Dr. Sandra P. Thomas, John Habel, Allan Philp, and Sandra Adcox.

[b]Counseling center counselors who served as data collectors included Drs. Richard K. Nash, Lynn Lockhart, Karen Swander, Gary Klukken, and Zsuzsanna Gyorky; Damaris Olsen Young; Betty Noble; and Allan Philp.

APPENDIX E

RESULTS FEEDBACK FORMS

Guide to Self-Description Form Results [1]

The Self-Description Form breaks down your lifestyle characteristics into four self-management subscores attending to four major areas of your functioning: Work, Social, Health, and Leisure. The first three subscores are based on adding scores on five items reflecting positive functioning activities in that area and subtracting scores on five items reflecting negative functioning. The fourth subscore, Leisure, is scored differently. Since all items are positive, their values are totalled and then halved to provide better comparison with the other subscores. As you can see from the average scores obtained from people previously tested the Leisure subscores are usually higher then the other subscores.

A Total Self-Management Score is obtained by simply totalling the subscores.

Pilot Testing Results

Scale	Mean	Range +/- 1 Stan. Dev.	Stan. Dev.
Total Self-Management	22.9	15 to 30.8	7.9
Work subscale	4.2	.8 to 7.6	3.4
Social subscale	6.4	3.4 to 9.4	3.0
Health subscale	3.8	-.1 to 7.7	3.9
Leisure subscale	8.4	5.8 to 10.6	2.6

Possible range for Total Self-Management: -60 to +80

Possible range for Work, Social, and Health subscales: -20 to +20

Possible range for Leisure subscale: 0 to 20

These results are based on testing 214 students (undergraduate, graduate, and nursing students). Since this is a new test instrument that has not yet been fully tested, please do not be unduly concerned if your scores seem extreme.

Remember that a balance across subscores may be more important than how high or how low your scores are. Also subscores are readily amenable to change by change in your activities or behaviors in a particular area.

We would suggest that if your subscore is extremely low (outside the range listed above), consider your functioning in that area objectively. Perhaps get additional feedback from someone that you trust and who knows you and will be objective. Decide for yourself if you want to make changes in that area. If you have further questions or wish at some future time to reassess your lifestyle, please contact:

Damaris Olsen Young, Counseling Psychology Doctoral Student
Department of Educational and Counseling Psychology, University of Tennessee
Knoxville, Tennessee 37996-3400 974-5131

GUIDE TO SELF-DESCRIPTION FORM RESULTS [2]

The Self-Description Form measures an individual's self-management effectiveness. Self-management is defined as the occurrence of behaviors that contribute to effective living and the non-occurrence of behaviors that prevent or serve as obstacle to effective living. The Self-Description Form breaks down your lifestyle characteristics into four self-management subscores attending to four major areas of your functioning: Work, Social, Health, and Leisure. The first three subscores are based on adding scores on five items reflecting positive functioning activities in that area and subtracting scores on five items reflecting negative functioning. The fourth subscore, Leisure, is scored differently. Since all items are positive, their values are totalled and then halved to provide better comparison with the other subscores. As you can see from the average scores obtained from people previously tested the Leisure subscores are usually higher then the other subscores. A Total Self-Management Score is obtained by simply totalling the subscores.

Pilot Testing Results

Scale	Mean	Average Scores: Upper and Lower Limits
Total Self-Management	22.51	17.0 to 28.5
Work subscale	3.89	2.0 to 7.0
Social subscale	6.52	4.0 to 9.0
Health subscale	3.87	1.0 to 7.0
Leisure subscale	8.22	6.5 to 10.0

Possible range for Total Self-Management: -60 to +80

Possible range for Work, Social, and Health subscales: -20 to +20

Possible range for Leisure subscale: 0 to 20

These results are based on testing 950 individuals (noncollege adults and undergraduate, graduate, technical school and nursing school students). Since this is a relatively new test instrument currently being tested, please do not be unduly concerned if your scores seem extreme.

Remember that a balance across subscores may be more important than how high or how low your scores are. Also subscores are readily amenable to change by change in your activities or behaviors in a particular area.

We would suggest that if your subscore is extremely low (outside the range listed above), consider your functioning in that area objectively. Perhaps get additional feedback from someone that you trust and who knows you and will be objective. Decide for yourself if you want to make changes in that area. If you have further questions or wish at some future time to reassess your lifestyle, please contact:

Damaris Olsen Young, Counseling Psychology Doctoral Student
Department of Educational and Counseling Psychology, University of Tennessee
Knoxville, Tennessee 37996-3400 974-5131

Identification No._____

Scoring Profile for Adult

Self-Description Form #1

WORK

+ Items	Positive Credit	- Items	Subtraction
2	2	7	1
13	3	19	1
24	3	30	2
36	3	41	0
47	1	53	1
TOTAL A	12	TOTAL B	5

Subtract B from A to get your Work Self-Management score.

A 12 - B 5 = 7

SOCIAL

+ Items	Positive Credit	- Items	Subtraction
8	3	3	1
20	2	14	1
31	4	25	3
42	2	37	2
54	2	48	2
TOTAL A	13	TOTAL B	9

Subtract B from A to get your Social Self-Management score.

A 13 - B 9 = 4

HEALTH

+ Items	Positive Credit	- Items	Subtraction
4	3	9	3
15	3	21	4
26	2	32	2
38	3	43	2
49	3	55	3
TOTAL A	14	TOTAL B	14

Subtract B from A to get your Health Self-Management score.

A 14 - B 14 = 0

LEISURE ACTIVITIES

All + Items			
5	2	33	2
10	2	39	1
16	3	44	3
22	1	50	2
27	1	56	2
TOTAL A	9	TOTAL B	10

Add A and B to get your Leisure Activities score. Because this subscale contains only positive items, one can score twice as high in this area as any other. For comparison with other subscales, we suggest that you first divide your leisure activities total by 2.

A 9 + B 10 = 19

Total 19 ÷ 2 = 9.5

* * * * * * * * * * * * * *

Work	7
Social	4
Health	0
Leisure	9.5
GRAND TOTAL	20.5

APPENDIX F

INSTRUCTIONS FOR "INVOLVED OTHER PERSON"

Instructions for "Involved Other Person"

Your perceptions of your loved one are important in our study. First please fill out the first five columns of the questionnaire as you see your loved one engaging, or not engaging, in the listed behaviors. Secondly, fill out the last column as you think your loved one personally evaluates herself or himself based on frequency of engaging in the listed behavior. For example, if you believe his or her "regularly" drinking coffee:

(a) contributes to your loved one's good feelings about herself or himself, put this: - 0 (+)
(b) contributes to your loved one's bad feelings about self, put this: (-) 0 +
(c) has no effect on loved one's feelings about self, put this: - (0) +

Please keep your responses confidential until after the project. Please do not discuss or show the questionnaire or any of your responses to your loved one or anyone. Place and seal it in the accompanying envelope for return. These efforts are to insure that your responses are fully yours, unaffected by others.

Thank you so much for your participation in this project. If after the study, you would like feedback on your questionnaire, please contact: Damaris Olsen Young, Doctoral Student, Department of Educational and Counseling Psychology, 108 Claxton Education Building, The University of Tennessee, Knoxville, TN 37996-3400 (Telephone 615-974-5131).

APPENDIX G

SOA SUPERVISOR'S RATING FORM

Identification No._____

Self-Description Form: SOA Supervisor Rating Form

In the course of your personal and professional activities each week, you probably engage in many different behaviors. We want you to indicate how frequently you engage in each of the behaviors listed below by using the following distinctions.

Never - Under no circumstances do you ever engage in the behavior.
Rarely - You engage in the behavior a few times a year.
Periodically - You engage in the behavior a few times a month.
Regularly - You engage in the behavior several times a week.
Always - You engage in the behavior every time an opportunity presents itself.

CIRCLE the number in the column that BEST corresponds to your level of participation in each behavior.

We would also like for you to indicate how your level of participation, or non participation, in each behavior (ranging from never to always) makes you feel about yourself. If your level of participation contributes to good feelings about yourself, circle the + in the column labeled "Value"; if your level of participation contributes to bad feelings, circle the - in the "value" column; and if your level of participation has no effect on the way you feel about yourself, circle the 0 in the "Value" column. For example, if your "regularly" drinking coffee

a) contributes to good feelings about yourself, put this: - 0 (+)
b) contributes to bad feelings about yourself, put this: (-) 0 +
c) has no effect on the way you feel about yourself, put this: - (0) +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
2. Filing work materials	0	1	2	3	4	- 0 +
3. Rambling in conversation	0	1	2	3	4	- 0 +
7. Over-extending myself in work commitments	0	1	2	3	4	- 0 +
8. Keeping my word	0	1	2	3	4	- 0 +
13. Attaining work goals	0	1	2	3	4	- 0 +
14. Criticizing others behind their backs	0	1	2	3	4	- 0 +

BEHAVIOR	LEVEL OF PARTICIPATION					VALUE
	Never	Rarely	Period-ically	Regularly	Always	
19. Jumping from one task to another	0	1	2	3	4	- 0 +
24. Completing work assignments on time	0	1	2	3	4	- 0 +
25. Interrupting others during conversation	0	1	2	3	4	- 0 +
30. Putting off unpleasant, but necessary, tasks	0	1	2	3	4	- 0 +
31. Listening closely to others' comments	0	1	2	3	4	- 0 +
36. Setting work goals	0	1	2	3	4	- 0 +
37. Dominating conversation	0	1	2	3	4	- 0 +
41. Losing work related materials	0	1	2	3	4	- 0 +
42. Encouraging others	0	1	2	3	4	- 0 +
47. Reading course/professionally related materials	0	1	2	3	4	- 0 +
48. Reprimanding others	0	1	2	3	4	- 0 +
53. Failing to meet deadlines	0	1	2	3	4	- 0 +
54. Showing affection toward others	0	1	2	3	4	- 0 +

APPENDIX H

ADDITIONAL RESULTS

Table H-1

Self-management Subscale and Total Scale Descriptive Statistics for Participating Groups (N = 1600)

	Scale Scores				
Statistic	Work	Social	Health	Leisure	Total
			Student Samples		
			College Freshmen and Sophomores in Remedial Program (n = 84)		
Mean	2.80	7.07	3.75	8.61	22.23
SD	3.50	3.42	4.20	2.37	8.72
Median	3.00	7.00	3.50	8.00	22.50
Mode	1.00	7.00	3.00	7.50	31.50
Range	-8 to +12	0 to +15	-7 to +13	+2 to +14.5	-1 to +41
			Upperclassmen (n = 136)		
Mean	4.03	5.82	4.55	8.76	23.17
SD	3.60	3.24	4.39	2.47	8.74
Median	4.00	5.50	4.00	8.50	22.75
Mode	2.00	5.00	4.00	7.50	22.50
Range	-6 to +13	-1 to +15	-9 to +16	+3 to +16.5	-5.5 to +45.5
			Graduate Students (n = 142)		
Mean	5.74	7.15	4.68	8.56	26.13
SD	3.38	3.07	3.81	2.43	8.25
Median	6.00	7.00	5.00	8.25	26.25
Mode	6.00	8.00	4.00	7.50	30.00
Range	-8 to +15	-5 to +13	-7 to +15	+3 to +16.5	-3.5 to +48.5

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
University Counseling Center Clients Combined (n = 176)					
Mean	2.81	5.59	3.75	8.20	20.34
SD	4.00	2.81	3.96	2.69	8.25
Median	3.00	5.00	4.00	8.00	21.00
Mode	4.00	5.00	5.00	7.00	22.00
Range	-11 to +13	-2 to +15	-6 to +13	+.5 to +18	-6.5 to +41.5
Individual Clients (n = 38)					
Mean	1.61	5.53	4.55	8.28	19.96
SD	4.41	3.16	3.82	3.16	9.47
Median	.50	5.00	4.50	8.00	19.25
Mode	.00	5.00	3.00	7.00	22.00
Range	-7 to +11	0 to +15	-4 to +13	+1.5 to +15	-.5 to +41.5
How to Study Group Clients (n = 61)					
Mean	3.05	5.98	3.57	8.61	21.22
SD	3.58	2.70	4.14	2.68	8.18
Median	3.00	6.00	4.00	8.50	22.00
Mode	5.00	6.00	5.00	10.50	21.00
Range	-6 to +13	0 to +11	-5 to +12	+.5 to +18	-6.5 to +35.5
Overcoming Student Stress Group Clients (n = 39)					
Mean	3.41	5.00	3.90	7.87	20.18
SD	4.15	2.99	4.10	2.28	8.29

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
Median	4.00	5.00	3.00	8.00	21.00
Mode	7.00	4.00	2.00	6.50	22.50
Range	-11 to +9	-2 to +11	-5 to +13	+3.5 to +13.5	+2 to +39
Assertiveness Training Group Clients (n = 38)					
Mean	3.03	5.61	3.08	7.78	19.49
SD	3.98	2.38	3.69	2.60	7.14
Median	4.00	5.00	3.50	7.75	19.00
Mode	4.00	5.00	3.00	6.50	17.50
Range	-9 to +8	+2 to +12	-6 to +10	+3 to +13.5	+4 to +35
University Student Orientation Assistants (n = 43)					
Mean	4.12	6.14	2.07	8.94	21.27
SD	3.81	3.61	3.26	2.67	9.02
Median	4.00	6.00	2.00	8.50	20.50
Mode	1.00	2.00	3.00	10.50	20.50
Range	-7 to +13	-4 to +15	-4 to +9	+4 to +14	-1 to +45.5
Community College How to Study Class Participants (n = 17)					
Mean	2.65	6.82	4.53	8.91	22.91
SD	1.73	2.58	3.26	2.24	5.03
Median	2.00	7.00	5.00	9.50	24.00
Mode	2.00	8.00	3.00	6.00	15.00
Range	-1 to +7	+2 to +11	-3 to +10	+5.5 to +13	+15 to +31.5

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
	State Technical School Students (n = 236)				
Mean	3.25	6.33	2.78	8.38	20.75
SD	4.11	2.93	4.30	2.40	8.75
Median	4.00	6.00	3.00	8.00	21.00
Mode	4.00	7.00	6.00	7.50	20.50
Range	-10 to +13	-1 to +15	-10 to +13	+2.5 to +15	-2 to +45
	Nursing School Students (n = 79)				
Mean	4.51	6.54	3.53	8.12	22.70
SD	3.41	2.73	3.83	2.75	7.93
Median	4.00	7.00	3.00	8.00	22.00
Mode	3.00	7.00	3.00	7.50	18.00
Range	-4 to +12	0 to +13	-6 to +12	+2 to +14.5	+6 to +40.5
	Nigerian Students (n = 88)				
Mean	7.20	8.46	7.76	10.10	33.53
SD	4.14	3.77	3.36	2.12	9.54
Median	7.00	9.00	8.00	10.00	32.50
Mode	5.00	10.00	5.00	9.50	28.50
Range	-7 to +15	-4 to +16	0 to +16	+5.5 to +16	+7 to +53.5
	Nonstudent Samples				
	University Alumnae (n = 133)				
Mean	3.93	5.92	4.65	8.46	22.97
SD	3.67	2.88	3.99	2.22	7.94

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
Median	4.00	6.00	5.00	8.00	23.00
Mode	2.00	7.00	5.00	7.50	26.00
Range	-8 to +14	-2 to +14	-6 to +17	+4 to +16	+2 to +48
	World's Fair Visitors (n = 170)				
Mean	3.79	6.22	4.89	7.66	22.55
SD	3.69	3.16	4.55	2.43	9.25
Median	4.00	6.00	5.00	7.50	22.75
Mode	4.00	5.00	5.00	7.00	20.50
Range	-4 to +15	-5 to +14	-7 to +18	+1.5 to +16.5	-6.5 to +50
	Amateur Track Club Members Combined (n = 53)				
Mean	3.57	6.38	8.09	8.18	26.22
SD	3.37	3.44	3.43	2.19	8.96
Median	4.00	6.00	9.00	8.00	26.50
Mode	4.00	5.00	9.00	7.50	23.50
Range	-5 to +11	-1 to +15	-3 to +16	+3.5 to +16	+6.5 to +56
	Knoxville Track Club (n = 16)				
Mean	4.06	6.94	8.69	8.81	28.50
SD	3.43	3.79	3.91	2.62	10.80
Median	4.00	6.00	9.00	8.25	24.75
Mode	4.00	5.00	9.00	6.50	23.50
Range	-3 to +11	-1 to +15	+1 to +16	+5 to +16	+12.5 to +56

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
			Oak Ridge Track Club (n = 37)		
Mean	3.35	6.14	7.84	7.91	25.23
SD	3.37	3.31	3.22	1.95	8.01
Median	4.00	6.00	9.00	8.00	27.00
Mode	6.00	5.00	9.00	7.50	31.00
Range	-5 to +9	-1 to +12	-3 to +13	+3.5 to +12.5	+6.5 to +38.5
			Canoe Club Members (n = 29)		
Mean	3.24	6.03	7.48	7.53	24.29
SD	2.63	2.15	2.67	1.65	4.39
Median	3.00	6.00	7.00	7.50	24.00
Mode	3.00	6.00	5.00	7.00	24.00
Range	-1 to +8	+2 to +10	+3 to +12	+4 to +12	+16 to +32.5
			General Hospital Employees (n = 19)		
Mean	5.95	5.53	3.63	8.42	23.53
SD	2.39	2.39	3.77	2.27	7.66
Median	7.00	5.00	3.00	8.00	25.00
Mode	7.00	7.00	1.00	7.50	27.00
Range	+1 to +11	0 to +10	-3 to +10	+4.5 to +13	+2.5 to +36.5
			TVA Managers (n = 16)		
Mean	5.06	6.56	4.25	7.88	23.75
SD	3.55	3.22	4.17	2.40	9.61

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
Median	6.00	8.00	3.50	7.75	24.50
Mode	6.00	8.00	3.00	8.00	24.50
Range	-3 to +10	+1 to +11	-5 to +11	+4.5 to 13	+6 to +43
Knoxville Association for Women Executives (n = 23)					
Mean	5.48	7.48	4.30	8.24	25.50
SD	3.75	3.50	3.51	2.16	8.10
Median	5.00	7.00	4.00	8.00	26.00
Mode	3.00	7.00	3.00	7.00	25.00
Range	0 to +14	0 to +15	-2 to +13	+5 to +15.5	+11.5 to +44
Federally Employed Women Organization (n = 14)					
Mean	4.57	6.07	5.21	8.29	24.14
SD	2.82	2.64	3.75	2.85	8.27
Median	5.00	6.00	5.00	8.75	23.75
Mode	8.00	4.00	1.00	10.50	20.50
Range	0 to +8	+2 to +11	-1 to +11	+3.5 to +13	+6.5 to +39
Learning Styles Project Teachers (n = 12)					
Mean	5.17	7.33	2.25	7.88	22.63
SD	2.66	3.31	3.77	2.06	8.14
Median	5.50	7.00	1.50	7.50	21.75
Mode	4.00	4.00	-1.00	7.00	15.50
Range	0 to +9	+2 to +13	-2 to +9	+3.5 to +11.5	+13 to +36.50

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
	General Population (n = 45)				
Mean	3.60	5.56	3.71	7.61	20.48
SD	3.22	3.27	4.78	1.84	8.23
Median	4.00	6.00	3.00	7.50	21.00
Mode	2.00	7.00	3.00	7.00	21.50
Range	-5 to +10	-4 to +12	-8 to +13	+4.5 to +12.5	-12 to +36.5
	Medical Hospital Patients Combined (n = 77)				
Mean	2.23	8.86	1.42	6.15	18.66
SD	4.33	3.21	4.56	2.89	9.55
Median	2.00	8.00	1.00	6.00	19.00
Mode	2.00	8.00	1.00	7.50	18.50
Range	-12 to +14	+3 to +17	-16 to +13	0 to +14.5	-6 to +42.5
	Physical Patients (n = 58)				
Mean	2.57	8.88	1.52	5.85	18.82
SD	3.81	2.94	4.11	2.92	8.58
Median	2.50	8.00	1.00	5.50	19.75
Mode	2.00	8.00	1.00	7.50	5.00
Range	-6 to +9	+3 to +15	-6 to +13	0 to +14.5	-2 to +42.5

Table H-1 (Continued)

Statistic	Scale Scores				
	Work	Social	Health	Leisure	Total
	Psychiatric Patients (n = 19)				
Mean	1.21	8.79	1.11	7.05	18.16
SD	5.65	4.02	5.83	2.69	12.30
Median	.00	7.00	2.00	7.50	17.00
Mode	-1.00	6.00	2.00	5.50	31.50
Range	-12 to +14	+4 to +17	-16 to +11	+2.5 to +13.5	-6 to +40.5

Note. Descriptive statistics for the additional freshmen and sophomores (n = 5) and Knoxville Association of Women Executives' spouses (n = 3) were not included due to their extremely small sample sizes.

Table H-2

Uncorrected Item-scale Correlations for the SDF (N = 1519)

	Scales				
Item - WORK	Work	Social	Health	Leisure	Total
+ Filing work materials	.419	-.021	.087	.114	.250
+ Attaining work goals	.537	.173	.131	.159	.407
+ Completing work assignments	.541	.186	.127	.085	.390
+ Setting work goals	.470	.140	.169	.210	.397
+ Reading professional materials	.435	.073	.113	.288	.354
- Over-extending	-.133	.015	-.033	.159	-.023
- Jumping from one task to another	-.371	-.153	-.095	.092	-.236
- Putting off tasks	-.484	-.188	-.123	.018	-.334
- Losing work materials	-.444	-.173	-.100	.070	-.284
- Failing to meet deadlines	-.553	-.190	-.116	.019	-.360
Item - SOCIAL					
+ Keeping my word	.244	.387	.114	.075	.323
+ Initiating conversation	.103	.207	.063	.195	.207
+ Listening closely	.140	.436	.074	.189	.308
+ Encouraging others	.138	.391	.079	.272	.318
+ Showing affection	.082	.370	.032	.197	.240
- Rambling in conversation	-.142	-.404	-.095	.122	-.219
- Criticizing others	-.121	-.512	-.141	-.012	-.310
- Interrupting others	-.124	-.510	-.040	.092	-.231
- Dominating conversation	-.010	-.372	-.061	.155	-.124
- Reprimanding others	.011	-.391	-.015	.075	-.121

Table H-2 (Continued)

	Item - Health	Scales				
		Work	Social	Health	Leisure	Total
+	Flossing my teeth	.124	.108	.413	.217	.358
+	Getting adequate rest	.235	.032	.405	.065	.332
+	Vigorous physical activity	.030	-.012	.459	.269	.312
+	Drinking water	.043	.096	.440	.147	.312
+	Stretching exercises	.080	.026	.547	.276	.394
-	Using hard drugs	-.158	-.092	-.243	.121	-.187
-	Eating excessively	-.161	-.164	-.427	.061	-.322
-	Smoking cigarettes	-.022	.057	-.440	.054	-.190
-	Eating junk food	-.159	-.152	-.401	.056	-.305
-	Gulping meals	-.155	-.234	-.412	.003	-.353
	Item - LEISURE					
+	Creating art objects	.069	.032	.040	.529	.213
+	Attending art and cultural exhibits	.122	.067	.178	.525	.316
+	Playing musical instruments	.071	.040	.005	.474	.184
+	Attending concerts	.018	.004	.071	.530	.196
+	Writing creatively	.047	.074	.042	.544	.224
+	Reading leisurely	.133	.114	.119	.450	.286
+	Gardening/yardwork	.028	.024	.144	.313	.182
+	Outdoor nature activities	.065	.106	.214	.498	.315
+	Hobby not on list	.086	.046	.093	.521	.250
+	Dancing	-.028	.022	-.015	.428	.111

Note. An uncorrected correlation includes an item's value in the Total scale or home subscale score with which the item is being correlated.

VITA

Damaris Olsen Young was born in Aurora, Illinois, on November 10, 1945. She lived briefly in her birthplace before moving South to grow up in Memphis, Tennessee. There she graduated from Whitehaven High School in 1963. She attained a B.S. in Nursing from the College of Nursing, The University of Tennessee, Memphis, in June, 1967. She acheived a M.S.N. with clinical specialization in psychiatric/mental health nursing from Vanderbilt School of Nursing, Nashville, Tennessee, in August, 1968. From September, 1968, until October, 1980, Damaris was employed by Lakeshore Mental Health Institute, Knoxville, in varied clinical nurse specialist and teacher-counselor positions working with emotionally disturbed children, youth, and adults. Positions involved both front-line and clinical/administrative supervisory responsibilities.

In December, 1980, Damaris entered the Counseling Psychology doctoral program at The University of Tennessee, Knoxville. She completed a two-year halftime internship at the Student Counseling Services Center, The University of Tennessee, Knoxville, in June, 1983. The first year was a "captive" internship approved by the American Psychological Association. Through her graduate work in the Department of Educational and Counseling Psychology, she also attained certification as a school psychologist in 1981.

Damaris is currently employed as a staff counselor with the Student Counseling Services Center, The University of Tennessee, Knoxville. She also maintains a parttime private practice in Knoxville. She resides in Norris, Tennessee, with her husband Sam, a wildlife officer for Anderson County; eight-year-old stepdaughter Lesley; and one-year-old son Daenon.