Selected Personality and Motivation Variables Related to Behavioral Commitment to Certain Health Teachings of Seventh-day Adventists

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SELECTED PERSONALITY AND MOTIVATION VARIABLES RELATED TO BEHAVIORAL COMMITMENT TO CERTAIN HEALTH TEACHINGS OF SEVENTH-DAY ADVENTISTS

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RELATED TO BEHAVIORAL COMMITMENT TO CERTAIN
HEALTH TEACHINGS OF SEVENTH-DAY ADVENTISTS

A Dissertation
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by

Ronald Edwin Ruskjer
August 1980
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ABSTRACT

SELECTED PERSONALITY AND MOTIVATION VARIABLES RELATED TO BEHAVIORAL COMMITMENT TO CERTAIN HEALTH TEACHINGS OF SEVENTH-DAY ADVENTISTS

by

Ronald Edwin Ruskjer

Chairman: George H. Akers
Title: SELECTED PERSONALITY AND MOTIVATION VARIABLES RELATED TO BEHAVIORAL COMMITMENT TO CERTAIN HEALTH TEACHINGS OF SEVENTH-DAY ADVENTISTS

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Date completed: August 1980

Problem

Seventh-day Adventists teach that the practice of certain health habits is essential to optimum spiritual nurture. It is commonly known, however, that a number of Seventh-day Adventist church members fail to practice one or more of these habits. This is a matter of crucial concern to dedicated Adventists in general and health- and faith-professionals of the Adventist persuasion in particular. This investigation was undertaken in order to help such Adventists better understand the phenomenon of health-habit practice.
It was the purpose of the present study to discover certain relationships that may exist between the practice of health habits on the one hand and personality-motivation variables on the other. It was hypothesized that selected personality and motivation variables are related to behavioral commitment to certain health teachings of Seventh-day Adventists, as evidenced by the practice of correspondent health habits.

Method

Three hundred and twenty-five British Columbia Seventh-day Adventists were chosen by a random method from among 5,280 baptized church members living within 250 miles of the Conference Lodge at Hope, B.C. Each participant was asked to respond to three questionnaires: the Sixteen Personality Factor Questionnaire, the Motivation Analysis Test, and the Adventist Lifestyle Questionnaire. A response of 83 percent was secured. The data were gathered in a manner which provided for the anonymity of each participant.

Twenty research hypotheses were formulated and tested using canonical-correlation analysis.

Results

Thirteen significant canonical correlations resulted, showing that both personality and motivation are related to behavioral commitment to certain health teachings of Seventh-day Adventists.

In all twenty analyses of combinations of personality-motivation variables and combinations of health-habit variables, it was found that two personality factors, one having to do with a person's bent toward either sober-mindedness or surface enthusiasm,
and the other having to do with an individual's tendency toward either shyness or social self-confidence, emerged more frequently than any others, suggesting that they are important variables related to health-habit practice. In the same vein, three motivational dynamics, one having to do with a person's total energy investment with respect to the basic motivating drive toward sensuous self-indulgent satisfactions, the second having to do with a person's total energy investment with respect to the basic motivating drive toward the expression of destructive hostile impulses, and the third having to do with an individual's level of need with respect to meeting the demands of conscience, emerged more frequently than any others, suggesting that they are important variables related to health-habit practice.

In the same analyses, health habits of spiritual nurture (personal daily devotions) and caffeine ingestion (coffee, cola beverages, and so forth) emerged more frequently than any others, suggesting that they are important variables related to structure of personality-motivation.

In addition to the statistical findings, a number of descriptive findings emerged, notably the fact that 68, 66, 62, and 50 percent of the population under study was not following, respectively, health habits of spiritual nurture (appropriation), supper intake (moderation), vegetarian lifestyle (appropriation), and sweets intake (moderation).

Conclusions

The study's descriptive findings point to the need for a
refocusing of health-ministry efforts such that the health-habit practice of church members, and the parallel tenor of their religious experience, might be enhanced.

Certain of the study's statistical findings point to the potential identification of a personality-motivation syndrome operating in the corporate life of Adventist health-agonists, those who fail to follow one or more of the health habits being considered. If this "health-agonistic syndrome" can be confirmed, health-ministry programs will need to be developed which will appeal to individuals who manifest the syndrome, individuals who are more happy-go-lucky, shy, comfort-oriented, pugnacious, and somewhat irresponsible. Such programs must, at one and the same time, both accommodate and confront these individuals, appealing in such a way that they effectively encourage healthful living without alienating. Clearly such health packaging and promotion will take prayerful discernment.
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61. Canonical Correlation of Hypothesis 20 ................. 133
The vision of health ministry was placed in my mind a number of years ago. Throughout the course of my graduate training and subsequent experience in pastoral endeavor I have been guided by a desire to see the dream become reality, not only in my own ministerial practice, but in that of my health- and faith-colleagues as well.

In certain settings I have, with great inspiration, seen the Lord's blueprint for healthful living held in high regard, both in theory and in practice. For this I rejoiced. In other settings, however, I have seen the blueprint strangely ignored. Too often my heart has been heavy as I have witnessed both in church leaders and members an attitude of complacency toward the Adventist health message.

Because I have been in a position to get close to some of these leaders and members I have discovered that, in many cases, this apparent complacency was, in fact, a reflection of the quiet frustration they felt after making numerous less than successful attempts to lift corporate Adventist goals regarding healthful living. It seemed that there was no lack of information pertaining to the "whats," but rather, a lack of applicable data having directly to do with the "hows."

As I listened and watched, the conviction grew that the frustration and complacency were not necessary in many instances.
I became convinced that conscientious health- and faith-ministers, together with other dedicated Adventists, could change the picture if they could see their quasi-conscientious brothers and sisters through different eyes, and operate according to the new understandings acquired.

Then opportunity came for me to further my education. After thoughtfully considering a number of dissertation topics related to health-and-faith ministry, I decided to investigate relationships between personality and motivation on the one hand, and the practice of denominationally encouraged health habits on the other. It was my hope that such a study would benefit, in a variety of contexts, not only Seventh-day Adventists, as such study should (White, 1938, p. 76; White, 1948, 1:486, 487, 489, 490, 492, 564, 565; 6:225, 267; 7:62; White, 1923, p. 495; White, 1950, p. 8; White, 1932, pp. 160, 304), but non-Adventists as well, again, as such an enterprise ought (White, 1948, 1:493, 560, 564; 3:162; 6:226; 227; White, 1932, p. 28; White, 1969, pp. 24, 25).

I now set forth the findings, not in the belief that the vision has become final reality, but with the feeling of assurance that it is more of a reality than when it was first dreamed. There is still much to do, but I am confident that a step has been taken, which, if followed by other steps, will help lead to the preparation of a people for the coming of a loving King, a King whose wish for you and me is couched in the words of III John 2, "Beloved, I wish above all things that thou mayest prosper and be in health, even as thy soul prospereth."
In pursuing this research, I have been greatly aided by the help and support of a number of individuals.

I would like especially to thank the members of my doctoral program committee for their many hours of teaching and consultation. George Akers, chairman of the committee, has been not only an inspirational and articulate thought leader in the field of religious education, a man with unique ability to truly grasp and communicate the global issues of life, but a warm personal friend as well, a senior colleague whose sense of humility, perspective, and Christian example has been to me a rich source of encouragement. Elder Chalmers, a true Adventist pioneer in the field of personality analysis and enrichment, has had substantial impact not only on this research effort but on my practice of ministry as well. The enthusiastic teaching of research designer Robert Cruise contributed much to my grasp of the potential benefits to be derived from careful educational research. The vision of long-time mentor Herald Habenicht for effective "blueprint" health ministry, together with his practical and consistent example, has been of continuing inspiration to me. Finally, as a guest member of the committee, Mervyn Hardinge, dean emeritus of the School of Health, Loma Linda University, offered practical input and personal encouragement which deserves special thanks.

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The tender care and constant loving encouragement received
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Above all, I thank the Master Physician for granting me the
sacred opportunity of sharing with others the good news of His
healing touch.
Seventh-day Adventists teach that the practice of certain health habits is essential to spiritual nurture (Our Firm Foundation, 1953, pp. 339, 359; Seventh-day Adventist Church Manual, 1976, pp. 222, 223). To illustrate, White (1905), accepted by Adventists as an inspired writer, urges bountiful and habitual use of the following: "Pure air, sunlight, abstinence, rest, exercise, proper diet, the use of water, trust in divine power . . ." (p. 127).

In other places White (1937, pp. 23, 25; 1905, p. 128; 1948, 1:488, 489; 1923, pp. 21, 445, 566; 1952, p. 141; 1961, p. 266) points out the intimate connection between health and faith. Clearly, Adventists take the position that healthful living is an important part of religious experience, which in turn is an important part of healthful living.

Though many Seventh-day Adventists conscientiously attempt to practice the health habits taught by their church, others, at a given point in their several experiences, refrain from practicing one or more of these habits. Here, then, is found one of the more vital problems facing those responsible for the health dimension of Adventist spiritual nurture, a matter of crucial concern to dedicated church members in general and health- and faith-professionals
of the Adventist persuasion in particular.

Statement of the Problem

It appears that while many Seventh-day Adventists follow their church's inspired teachings regarding healthful living, a notable number of their counterparts do not.

A review of literature, prompted by observations made during practice of both health- and faith-ministry, raised the possibility that traits of personality and/or motivation account for some of the difference in the two groups, predicting tendencies toward the conscientious practice of recommended health habits on the part of some Adventists, as well as tendencies toward the quasi-conscientious practice of their peers. In other words, it seemed plausible to postulate a relationship between traits of personality and/or motivation on the one hand, and the practice of health habits on the other. Do such relationships exist? The problem deserves careful scrutiny and clear answers.

However, in the population under study, no empirical data were available that would fill the need to know whether or not, in fact, such relationships are present.

Purpose of the Study

Therefore, it is the purpose of this study to investigate the phenomenon of health-habit practice as it relates to variables of personality-motivation. This involves an attempt to discover relationships that may exist between personality traits (measured by the Sixteen Personality Factor Questionnaire, the 16 P.F., see appendix A) and motivation traits (measured by the Motivation
Analysis Test, the M.A.T., see appendix B) on the one hand, and extent of behavioral commitment to Seventh-day Adventist health teachings as reflected in the self-reported practice of certain health habits (measured by the Adventist Lifestyle Questionnaire, the A.L.Q., see appendix C) on the other.

The 16 P.F. personality variables involved (sixteen in all) include Factors:

A: Reserved versus Outgoing.
B: Concrete-thinking versus Abstract-thinking.
C: Affected by feelings versus Emotionally stable.
E: Humble versus Assertive.
F: Sober versus Happy-go-lucky.
G: Expedient versus Conscientious.
H: Shy versus Venturesome.
I: Tough-minded versus Tender-minded.
L: Trusting versus Suspicious.
M: Practical versus Imaginative.
N: Forthright versus Astute.
O: Self-assured versus Apprehensive.
Q1: Conservative versus Experimenting.
Q2: Group-dependent versus Self-sufficient.
Q3: Undisciplined versus Controlled.
Q4: Relaxed versus Tense.

The M.A.T. motivation variables involved (forty in all) are divided into four categories of ten variables, or Dynamic Structures, each. The categories are:

1. U: Unintegrated scores, measuring levels of need.
2. I: Integrated scores, measuring levels of satisfaction.

3. T: Total scores, measuring levels of total energy investment.

4. C: Conflict scores, measuring levels of unsatisfied need.

In each category, the ten variables are labelled first by the appropriate symbol, U, I, T, or C, and then by the following designations:

Ca: Career Sentiment.
Ho: Home-parental Sentiment.
Fr: Fear Erg.
Na: Narcism-comfort Erg.
SE: Superego Sentiment.
SS: Self-sentiment.
Ma: Mating Erg.
Pg: Pugnacity-sadism Erg.
As: Assertiveness Erg.
Sw: Sweetheart-spouse Sentiment.

This yields a total of fifty-six personality-motivation variables.

Seventh-day Adventist health teaching encourages behavioral commitment in one of three ways: abstinence, which in common parlance can be translated "leave it alone," moderation "handle with care," or appropriation "take and enjoy." These views are held with regard to a number of health habits. Those selected for use in this study, however, include only the following (see A.L.Q., questions 31-50):

1. Alcohol ingestion: abstinence.

2. Breakfast regularity: appropriation.
3. Caffeine ingestion: abstinence.


5. Egg intake: moderation.


7. Fresh-air intake: appropriation.


11. Sleep regularity: appropriation.


17. Tobacco use: abstinence.


With each, those practicing abstinence, moderation, or appropriation, as the desired case might be, are said to be "following" the health habit, while those failing to practice are said to be "not following" a given habit.

Importance of the Study

Seventh-day Adventists believe that "Health . . . is more closely related to conscience and religion than many realize" (White, 1923, p. 566). This is because they feel that "The body is
the only medium through which the mind and the soul are developed for the unbuilding of character" (White, 1905, p. 130).

In keeping with such thinking, Adventists believe that the practice of certain health habits is essential to the development of character, a development which affects happiness and usefulness in this life as well as a person's eternal destiny. Therefore, Adventists who fail to practice such habits, place both themselves and those within the circle of their influence in grave danger.

If those charged with responsibility for the health dimension of Adventist spiritual nurture believe the above, they must place clear understanding of the Adventist's relationship to inspired teaching on the subject of healthful living high on their list of concerns.

Understanding is needed; hence the importance of this study. Correct understanding can come only from awareness of the underlying milieu from which health-habit practice, or lack of practice, springs.

It is felt that findings of this study will pave the way for health-conscious soul-searching Adventists, both laity and leadership, to gain a better understanding of the relationship between the personality and motivation of church members on the one hand, and their behavioral commitment to the Adventist health teachings on the other.

It seems reasonable that the unfolding of such understanding might in turn provide suggestions for changes in the packaging and promotion of those health teachings such that behavioral commitment, as reflected in the number of desired health habits being practiced, will increase.

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Theoretical Basis of the Study

Selection of the personality and motivation variables, and in part the formulation of specific research hypotheses, has been based on the broad theory that personality and motivation are related to behavior. In response to the question, "Why is it felt that personality and motivation variables are related to the practice of health habits?" the answer is given, "Because of the theory that personality and motivation can be measured in the form of identifiable traits (Cattell, 1965, and Hall & Lindzey, 1970), and the theory that those measurable personality-motivation variables are related to behavior." This latter theory is illustrated by a number of studies which demonstrate that selected personality and motivation traits, among them certain of those measured by the 16 P.F. and M.A.T., are related to the practice of specific behaviors, in this case health behaviors, including such health habits as caffeine consumption, drinking, drug abuse, eating, exercising, religious commitment, sensation-seeking, and smoking (Burdsal, Greenberg, & Timpe, 1973, and Krug & Henry, 1974). For an extended discussion of both theories, see chapter II, Review of Related Literature, pp. 22-42.

Selection of the health-habit variables, and in part the formulation of specific research hypotheses, has been based on the assumption of the Divine inspiration of Seventh-day Adventist health-and-faith educator Ellen G. White. For purposes of this study, emphasis is being placed on White's identification of twenty health habits, which form a part of that body of inspired health teachings held by Adventists to be worthy of behavioral commitment (White,
(1905, 1910, 1923, 1926, 1932, 1938, 1948, 1949, 1952). Though White encourages practice of more than the twenty health habits chosen, these were selected for inclusion in the Adventist Lifestyle Questionnaire on the basis of the following rationale: (1) A health habit was a candidate for inclusion if there was evidence in the literature to suggest that that variable might be related to cancer, endpoint of the California Adventist Health Study, the research effort for which the A.L.Q. was originally developed. (2) A health habit was a candidate for inclusion if there was a scientifically defensible pathogenetic pathway, or theoretic biologically plausible mechanism, which could tie that variable to risk of cancer. (3) A health habit was a candidate for inclusion if it was particularly unique to Adventist lifestyle and hence indicative as to whether or not an individual was in adherence with the overall health philosophy of E. G. White and the S.D.A. Church. Health habits were selected for inclusion in the A.L.Q. from a larger pool of such variables where ultimately matters of space and relative importance to risk of cancer became the final considerations (Phillips, 1980).

Hypotheses to be Tested

The underlying hypothesis of this study is that selected personality and motivation variables are related to behavioral commitment to certain health teachings of Seventh-day Adventists. In order to obtain as complete a picture as possible, given the limited number of participants, the nature of the variables being dealt with, and the constraints inherent in the statistical method
used, this broad working hypothesis is divided into the following research hypotheses:

1. There is a significant canonical correlation between a linear combination of personality variables $A$ (Reserved versus Outgoing), $B$ (Concrete-thinking versus Abstract-thinking), $C$ (Affected by feelings versus Emotionally stable), $E$ (Humble versus Assertive), $F$ (Sober versus Happy-go-lucky), $G$ ( Expedient versus Conscientious), $H$ (Shy versus Venturesome), $I$ (Tough-minded versus Tender-minded), $L$ (Trust ing versus Suspicious), $M$ (Practical versus Imaginative), $N$ (Forthright versus Astute), $O$ (Self-assured versus Apprehensive), $Q_1$ (Conservative versus Experimenting), $Q_2$ (Group-dependent versus Self-sufficient), $Q_3$ (Undisciplined versus Controlled), $Q_4$ (Relaxed versus Tense) on the one hand, and a linear combination of health-habit variables $1$ (Alcohol ingestion), $2$ (Breakfast regularity), $3$ (Caffeine ingestion), $4$ (Cheese selection), $5$ (Egg intake), $6$ (Exercise regularity), $7$ (Fresh-air intake), $8$ (Leisure activity), $9$ (Milk selection), $10$ (Refined-food intake) on the other.

2. There is a significant canonical correlation between a linear combination of personality variables $A$ (Reserved versus Outgoing), $B$ (Concrete-thinking versus Abstract-thinking), $C$ (Affected by feelings versus Emotionally stable), $E$ (Humble versus Assertive), $F$ (Sober versus Happy-go-lucky), $G$ ( Expedient versus Conscientious), $H$ (Shy versus Venturesome), $I$ (Tough-minded versus Tender-minded), $L$ (Trust ing versus Suspicious), $M$ (Practical versus Imaginative), $N$ (Forthright versus Astute), $O$ (Self-assured versus Apprehensive), $Q_1$ (Conservative versus Experimenting), $Q_2$ (Group-dependent versus
Self-sufficient), Q3 (Undisciplined versus Controlled), Q4 (Relaxed versus Tense) on the one hand, and a linear combination of health-habit variables 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake), 16 (Sweets intake), 17 (Tobacco use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian lifestyle) on the other.

3. There is a significant canonical correlation between a linear combination of personality variables A (Reserved versus Out-going), B (Concrete-thinking versus Abstract-thinking), C (Affected by feelings versus Emotionally stable), E (Humble versus Assertive), F (Sober versus Happy-go-lucky), G (Expeditious versus Conscientious), H (Shy versus Venturesome), I (Tough-minded versus Tender-minded), L (Trusting versus Suspicious), M (Practical versus Imaginative), N (Forthright versus Astute), O (Self-assured versus Apprehensive), Q1 (Conservative versus Experimenting), Q2 (Group-dependent versus Self-sufficient), Q3 (Undisciplined versus Controlled), Q4 (Relaxed versus Tense) on the one hand, and a linear combination of health-habit variables 6 (Exercise regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake), 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake) on the other.

4. There is a significant canonical correlation between a linear combination of personality variables A (Reserved versus Out-going), B (Concrete-thinking versus Abstract-thinking), C (Affected by feelings versus Emotionally stable), E (Humble versus Assertive), F (Sober versus Happy-go-lucky), G (Expeditious versus Conscientious), H (Shy versus Venturesome), I (Tough-minded versus Tender-minded),
L (Trusting versus Suspicious), M (Practical versus Imaginative),
N (Forthright versus Astute), O (Self-assured versus Apprehensive),
Q1 (Conservative versus Experimenting), Q2 (Group-dependent versus
Self-sufficient), Q3 (Undisciplined versus Controlled), Q4 (Relaxed
versus Tense) on the one hand, and a linear combination of health-
habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity),
3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 16
(Sweets intake), 17 (Tobacco use), 18 (Water intake), 19 (Weight
control), 20 (Vegetarian lifestyle) on the other.

5. There is a significant canonical correlation between a
linear combination of unintegrated motivation variables U:Ca (Career
Sentiment), U:Ho (Home-parental Sentiment), U:Fr (Fear Erg), U:Na
(Narcism-comfort Erg), U:SE (Superego Sentiment), U:SS (Self-
sentiment), U:Ma (Mating Erg), U:Pg (Pugnacity-sadism Erg), U:As
(Assertiveness Erg), U:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 1 (Alcohol
ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4
(Cheese selection), 5 (Egg intake), 6 (Exercise regularity), 7
(Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10
(Refined-food intake) on the other.

6. There is a significant canonical correlation between a
linear combination of unintegrated motivation variables U:Ca (Career
Sentiment), U:Ho (Home-parental Sentiment), U:Fr (Fear Erg), U:Na
(Narcism-comfort Erg), U:SE (Superego Sentiment), U:SS (Self-sentiment),
U:Ma (Mating Erg), U:Pg (Pugnacity-sadism Erg), U:As (Assertiveness
Erg), U:Sw (Sweetheart-spouse Sentiment) on the one hand, and a
linear combination of health-habit variables 11 (Sleep regularity),
12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure),
15 (Supper intake), 16 (Sweets intake), 17 (Tobacco use), 18 (Water
intake), 19 (Weight control), 20 (Vegetarian lifestyle) on the other.

7. There is a significant canonical correlation between a
linear combination of unintegrated motivation variables U:Ca (Career
Sentiment), U:Ho (Home-parental Sentiment), U:Fr (Fear Erg), U:Na
(Narcism-comfort Erg), U:SE (Superego Sentiment), U:SS (Self-
sentiment), U:Ma (Mating Erg), U:Pg (Pugnacity-sadism Erg), U:As
(Assertiveness Erg), U:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 6 (Exercise
regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk
selection), 10 (Refined-food intake), 11 (Sleep regularity), 12
(Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure),
15 (Supper intake) on the other.

8. There is a significant canonical correlation between a
linear combination of unintegrated motivation variables U:Ca (Career
Sentiment), U:Ho (Home-parental Sentiment), U:Fr (Fear Erg), U:Na
(Narcism-comfort Erg), U:SE (Superego Sentiment), U:SS (Self-
sentiment), U:Ma (Mating Erg), U:Pg (Pugnacity-sadism Erg), U:As
(Assertiveness Erg), U:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 1 (Alcohol
ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4
(Cheese selection), 5 (Egg intake), 16 (Sweets intake), 17 (Tobacco
use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian life-
style) on the other.

9. There is a significant canonical correlation between a
linear combination of integrated motivation variables I:Ca (Career
Sentiment), I:Ho (Home-parental Sentiment), I:Fr (Fear Erg), I:Na
(Narcism-comfort Erg), I:SE (Superego Sentiment), I:SS (Self-
sentiment), I:Ma (Mating Erg), I:Pg (Pugnacity-sadism Erg), I:As
(Assertiveness Erg), I:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 1 (Alcohol
ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4
(Cheese selection), 5 (Egg intake), 6 (Exercise regularity), 7
(Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10
(Refined-food intake) on the other.

10. There is a significant canonical correlation between
a linear combination of integrated motivation variables I:Ca (Career
Sentiment), I:Ho (Home-parental Sentiment), I:Fr (Fear Erg), I:Na
(Narcism-comfort Erg), I:SE (Superego Sentiment), I:SS (Self-
sentiment), I:Ma (Mating Erg), I:Pg (Pugnacity-sadism Erg), I:As
(Assertiveness Erg), I:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 11 (Sleep
regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sun-
light exposure), 15 (Supper intake), 16 (Sweets intake), 17 (Tobacco
use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian life-
style) on the other.

11. There is a significant canonical correlation between a
linear combination of integrated motivation variables I:Ca (Career
Sentiment), I:Ho (Home-parental Sentiment), I:Fr (Fear Erg), I:Na
(Narcism-comfort Erg), I:SE (Superego Sentiment), I:SS (Self-
sentiment), I:Ma (Mating Erg), I:Pg (Pugnacity-sadism Erg), I:As
(Assertiveness Erg), I:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 6 (Exercise
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regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake), 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake) on the other.

12. There is a significant canonical correlation between a linear combination of integrated motivation variables I:Ca (Career Sentiment), I:Ho (Home-parental Sentiment), I:Fr (Fear Erg), I:Na (Narcism-comfort Erg), I:SE (Superego Sentiment), I:SS (Self-sentiment), I:Ma (Mating Erg), I:Pg (Pugnacity-sadism Erg), I:As (Assertiveness Erg), I:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 6 (Sweets intake), 7 (Tobacco use), 8 (Water intake), 9 (Weight control), 10 (Vegetarian lifestyle) on the other.

13. There is a significant canonical correlation between a linear combination of total motivation variables T:Ca (Career Sentiment), T:Ho (Home-parental Sentiment), T:Fr (Fear Erg), T:Na (Narcism-comfort Erg), T:SE (Superego Sentiment), T:SS (Self-sentiment), T:Ma (Mating Erg), T:Pg (Pugnacity-sadism Erg), T:As (Assertiveness Erg), T:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 6 (Exercise regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake) on the other.

14. There is a significant canonical correlation between a
linear combination of total motivation variables T:Ca (Career Sentiment), T:Ho (Home-parental Sentiment), T:Fr (Fear Erg), T:Na (Narcism-comfort Erg), T:SE (Superego Sentiment), T:SS (Self-sentiment), T:Ma (Mating Erg), T:Pg (Pugnacity-sadism Erg), T:As (Assertiveness Erg), T:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake), 16 (Sweets intake), 17 (Tobacco use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian lifestyle) on the other.

15. There is a significant canonical correlation between a linear combination of total motivation variables T:Ca (Career Sentiment), T:Ho (Home-parental Sentiment), T:Fr (Fear Erg), T:Na (Narcism-comfort Erg), T:SE (Superego Sentiment), T:SS (Self-sentiment), T:Ma (Mating Erg), T:Pg (Pugnacity-sadism Erg), T:As (Assertiveness Erg), T:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 6 (Exercise regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake), 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake) on the other.

16. There is a significant canonical correlation between a linear combination of total motivation variables T:Ca (Career Sentiment), T:Ho (Home-parental Sentiment), T:Fr (Fear Erg), T:Na (Narcism-comfort Erg), T:SE (Superego Sentiment), T:SS (Self-sentiment), T:Ma (Mating Erg), T:Pg (Pugnacity-sadism Erg), T:As (Assertiveness Erg), T:Sw (Sweetheart-spouse Sentiment) on the one
hand, and a linear combination of health-habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 6 (Sweets intake), 7 (Tobacco use), 8 (Water intake), 9 (Weight control), 10 (Vegetarian lifestyle) on the other.

17. There is a significant canonical correlation between a linear combination of motivational conflict variables C:Ca (Career Sentiment), C:Ho (Home-parental Sentiment), C:Fr (Fear Erg), C:Na (Narcism-comfort Erg), C:SE (Superego Sentiment), C:SS (Self-sentiment), C:Ma (Mating Erg), C:Pg (Pugnacity-sadism Erg), C:As (Assertiveness Erg), C:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 6 (Exercise regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake) on the other.

18. There is a significant canonical correlation between a linear combination of motivational conflict variables C:Ca (Career Sentiment), C:Ho (Home-parental Sentiment), C:Fr (Fear Erg), C:Na (Narcism-comfort Erg), C:SE (Superego Sentiment), C:SS (Self-sentiment), C:Ma (Mating Erg), C:Pg (Pugnacity-sadism Erg), C:As (Assertiveness Erg), C:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake), 16 (Sweets intake), 17 (Tobacco use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian lifestyle) on the other.
19. There is a significant canonical correlation between a linear combination of motivational conflict variables C:Ca (Career Sentiment), C:Ho (Home-parental Sentiment), C:Fr (Fear Erg), C:Na (Narcism-comfort Erg), C:SE (Superego Sentiment), C:SS (Self-sentiment), C:Ma (Mating Erg), C:Pg (Pugnacity-sadism Erg), C:As (Assertiveness Erg), C:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 6 (Exercise regularity), 7 (Fresh-air intake), 8 (Leisure activity), 9 (Milk selection), 10 (Refined-food intake), 11 (Sleep regularity), 12 (Snack ingestion), 13 (Spiritual nurture), 14 (Sunlight exposure), 15 (Supper intake) on the other.

20. There is a significant canonical correlation between a linear combination of motivational conflict variables C:Ca (Career Sentiment), C:Ho (Home-parental Sentiment), C:Fr (Fear Erg), C:Na (Narcism-comfort Erg), C:SE (Superego Sentiment), C:SS (Self-sentiment), C:Ma (Mating Erg), C:Pg (Pugnacity-sadism Erg), C:As (Assertiveness Erg), C:Sw (Sweetheart-spouse Sentiment) on the one hand, and a linear combination of health-habit variables 1 (Alcohol ingestion), 2 (Breakfast regularity), 3 (Caffeine ingestion), 4 (Cheese selection), 5 (Egg intake), 16 (Sweets intake), 17 (Tobacco use), 18 (Water intake), 19 (Weight control), 20 (Vegetarian lifestyle) on the other.

For the test of each hypothesis, the alpha level is set at .05. For an extended discussion of the rationale behind the use of twenty research hypotheses, see chapter III, Methodology, pp. 57-59.

**Basic Assumptions**

It is assumed in this study that:
1. Some Adventists are practicing (following) the health habits under investigation while others are not.

2. Seventh-day Adventists will not only participate in a study of this nature, but will complete the questionnaires in an honest manner if the significance of the study is conveyed to them and provision is made for their anonymity.

3. Participants are knowledgeable regarding the church's encouragement of each of the twenty health habits under study.

4. Since the Adventist health message is a part of the Adventist religious framework, there may be spiritual forces influencing health-habit practice which can not be measured with existing human instrumentation or techniques.

5. Ellen G. White (1827-1915), a founder and influential thought leader of the Seventh-day Adventist Church, was an inspired writer whose statements regarding the practice of health habits carry the force of Divine revelation (see Douglass, 1973; Nichol, 1951; Noorbergen, 1972; Ruskjer, 1974; and White, 1973).

Definition of Terms

Certain words used quite often in this study are to be understood as follows:

1. Adventist Lifestyle Questionnaire (A.L.Q.) is exhibited in appendix C and is an instrument used to ascertain the practice of the twenty health habits under study.

2. Behavioral commitment to a given health teaching is defined as practicing its correspondent health habit (see p. 52, paragraph 5, of this study).
3. British Columbia Conference of Seventh-day Adventists is understood in the following context: Church government in the Seventh-day Adventist Church operates on a five-tier system in North America. (1) The local Church is governed by an elected church board, the chairman of which is the pastor. (2) The Local Conference, comprised of a number of Local Churches, pays, advises, and sometimes directs the local pastors within its territory. (3) A number of conferences are advised by and sometimes directed by a Union Conference whose authority extends over a wide geographical area. (4) The Union Conference is answerable to a Division which consists of a number of Union Conferences. (5) The General Conference of Seventh-day Adventists is comprised of the several world Divisions and is headquartered in Washington, D.C. The British Columbia Conference, then, is the unit of S.D.A. church government between the Canadian Union Conference and the Local Churches of British Columbia. The Canadian Union Conference is a constituent part of the North American Division, which in turn is part of the General Conference of Seventh-day Adventists. To be considered a member of the British Columbia Conference a person must have reached the age of accountability (different for various individuals), evidenced commitment of his life to Jesus Christ and His will as revealed in Scripture, been baptized by immersion, and voted into church membership by a Local Church upon the recommendation of the church board.

4. Erg is a basic motivating drive (see appendix B).

5. Health message is a term referring to that body of inspired teaching which, in part, encourages persons to follow the health habits considered in this study.
6. **Health ministry** is any effort designed to encourage health-habit practice.

7. **Inspired writer** is a term which refers to a person whose writings are believed to be the product of a special revelation from God.

8. **Motivation Analysis Test** (M.A.T.) is exhibited in appendix B and is an instrument used to ascertain motivation traits.

9. **Sentiment** is an acquired motivating attitude (see appendix B).

10. **Sixteen Personality Factor Questionnaire** (16 P.F.) is exhibited in appendix A and is an instrument used to ascertain personality traits.

**Delimitations of the Study**

Due to practical considerations, the population of this study has been limited to the 5,280 baptized members of those forty-three British Columbia congregations located within approximately 250 miles of the Conference Lodge at Hope, B.C. as of January 1, 1979.

Further, the study has been limited to investigation of the aforementioned personality and motivation variables. In addition, it has been limited to inquiry into the behavioral commitment of Seventh-day Adventists as reflected in their reported practice of the health-habit variables stated.

**Outline of the Study**

Chapter I has introduced the problem of quasi-conscientious health-habit practice among Seventh-day Adventists. The purpose, importance, and theoretical basis of the study have been discussed.
The experimental hypotheses have been formulated. Assumptions have been set forth, important terms defined, and delimitations of the study stated.

Chapter II reviews related literature on the subjects of the measurability of personality and motivation traits, the correlation of 16 P.F. and M.A.T. traits with the practice of health habits, and the importance of the twenty health habits under consideration.

Chapter III explains the methodology used in the study. The type of research is defined, as are the population and sample. The instrumentation is described and procedures for collecting data delineated. Statistical analysis and limitations of the study are also discussed.

Chapter IV presents the findings of the study.

Chapter V contains a summary of the study and lists conclusions and recommendations.

Appendices and a selected bibliography complete the report of this research.
CHAPTER II

REVIEW OF RELATED LITERATURE

No study has been found which attempts to test the hypotheses asserted in this investigation. However, there is an abundance of material relating to various aspects of the topic which, when brought to bear on the problem addressed in this study, forms a framework for the experimental hypotheses.

Literature has been selected which appears to be representative of that existing within the related fields. It will be reviewed under the following subdivisions:

1. Literature on the measurability of personality and motivation traits

2. Literature on the correlation of Sixteen Personality Factor Questionnaire (16 P.F.) and Motivation Analysis Test (M.A.T.) traits with the practice of health habits

3. Literature on the importance of the twenty health habits under consideration as measured by the Adventist Lifestyle Questionnaire (A.L.Q.)

Measurability of Personality and Motivation Traits

Some scholars, for example, Hogan, DeSoto, and Solano (1977, p. 225; citing as well, Jones, Kanouse, Kelley, Mischel, Valins, & Weiner, 1971; Mischel, 1968; Peterson, 1968) take the position that
measurement-based personality and motivation research is a questionable venture at best. Criticisms set forth by such writers are joined by a number of lay criticisms, for example, Worchel and Byrne (1964, p. 42) calculated to credit the idea that personality and motivation traits are at worst unmeasurable, and at best useless bits of meaningless information.

Other scholars (Crow, 1978, pp. 181, 182; Eysenck, 1958, p. 183; Fiske, 1963, p. 449) seem to feel that the critics ought to hold their comment until measurement enthusiasts have had ample opportunity to demonstrate the validity, or lack of validity, of their claims.


This latter view, the position that personality and motivation traits are measurable, will comprise a portion of this study's theoretical construct.

In connection with this view, it should be noted that an excellent treatment of the specifics involved in actually identifying and quantifying personality and motivation traits, as well as
a critique on such measurement, can be found in the work of Hall and Lindzey (1970, pp. 380-89, 394-96, 408-12, 592, 618), a work repre-
representative of other sources (for example, Arndt, 1974, Bischof, 1964; Burton, 1974; DiCaprio, 1974; Liebert & Spiegler, 1970; Maddi, 1972; Mehrabian, 1968; Murphy & Jensen, 1932; Ruitenbeek, 1964; Southwell & Me Rebaum, 1964) which treat prevailing theories of personality and motivation.

Hall and Lindzey (1970) discuss in some detail factor
analysis, the particular empirical technique used in identifying
the several 16 P.F. and M.A.T. variables used in this study.

Correlation of Sixteen Personality Factor
Questionnaire and Motivation Analysis Test
Traits with the Practice of Health Habits

Associated with the theory that personality and motivation
traits are measurable is the theory that such variables are related
to behavior. This latter theory is validated by a number of studies
which relate selected personality and motivation traits, among them
those measured by the 16 P.F. and M.A.T., to the practice of specific
behaviors; in this case, appropriately enough, health behaviors, in-
cluding such health habits as caffeine consumption, drinking, drug
abuse, eating, exercising, religious commitment, sensation-seeking,
and smoking.

Explanation of 16 P.F. and M.A.T. terminology can be found
in appendices A and B, respectively, should the reader desire
additional information on what is being measured by a given trait.

The studies now follow:
Brien, Kleiman, and Eisenman (1972), using the 16 P.F., correlated personality with drug use.

They found that certain personality-trait scores of methadrine, "speed," users (n=25) were different, by one standard deviation, from normal adult scores on the same traits. Methadrine users scored high on Factor A, they tended to be outgoing as opposed to being reserved; low on Factor C, they tended to be affected by feelings as opposed to being emotionally stable; high on Factor E, they tended to be assertive as opposed to being humble; high on Factor F, they tended to be happy-go-lucky as opposed to being sober; high on Factor L, they tended to be suspicious as opposed to being trusting; and high on Factor Q4, they tended to be tense as opposed to being relaxed.

In addition they found that certain personality-trait scores of heroin users (n=25) were different, by one standard deviation, from normal adult scores on the same traits. Heroin users scored low on Factor C, they tended to be affected by feelings as opposed to being emotionally stable; and high on Factor E, they tended to be assertive as opposed to being humble.

Further, they found that certain personality-trait scores of mixed-drug users (n=25) were different, by one standard deviation, from normal adult scores on the same traits. Mixed-drug users scored low on Factor C, they tended to be affected by feelings as opposed to being emotionally stable; high on Factor O, they tended to be apprehensive as opposed to being self-assured; and high on Factor Q4, they tended to be tense as opposed to being relaxed.

Additionally, it was determined that certain personality-
trait scores of alcohol users (n=25) were different, by one standard deviation, from normal adult scores on the same traits. Alcohol users scored high on Factor N, they tended to be astute as opposed to being forthright; and high on Factor Q1, they tended to be experimenting as opposed to being conservative.

The writers further pointed out that other studies (Foulks & Eisenman, 1964; Speck, Barr, Eisenman, Foulks, Goldman & Lincoln, 1971) suggest a relationship between personality and drug use.

Buccola and Stone (1975) correlated personality, using the 16 P.F., with walk-jogging.

They found that certain personality-trait scores of sixty to seventy-nine-year-old males (n=16) were different before and after a fourteen-week (approximately one hour per day, three days per week) walk-jog program. Following the treatment, the walk-joggers were lower in Factor F, they tended to be more sober as opposed to being happy-go-lucky (pre-test mean, 5.13; post-test mean, 3.53; significant at the .001 level); and higher in Factor Q2, they tended to be more self-sufficient as opposed to group-dependent (pre-test mean, 4.92; post-test mean, 6.59; significant at the .05 level).

There were no significant personality changes, however, in a comparable group of sixty to seventy-nine-year-old males (n=20) who engaged in the same fourteen-week program, not as walk-joggers but as cyclists.

The writers pointed out that though their results were consistent with one review (Hammett, 1967) which suggests that exercise programs tend to produce few personality changes, they also supported findings (Jette, 1969) which suggest that habitual
exercisers are characterized as being low in Factor F, again, tending to be sober as opposed to being happy-go-lucky.

Burdsal, Greenberg, and Timpe (1973) have correlated personality, using the 16 P.F., and motivation, using the M.A.T., with marijuana usage.

Findings indicated that although undergraduate students who used marijuana (n=104) "were not a homogeneous group in terms of personality and motivational structure," they nevertheless exhibited "four distinct personality-motivational patterns." Although, with the exception of the fourth pattern, the results demonstrated little relation to the usual 16 P.F. secondary factors (factors derived from various combinations of the sixteen "primary" factors used in the present study), they did indeed appear to represent distinct personality types.

Pattern Number One represented an antisocial group. Persons with this pattern appeared to have rejected the work ethic (this is indicated by a low integrated Career score on the M.A.T.) and were not motivated by fear such as a fear of being caught or a fear of major illness or catastrophe (this is indicated by a low integrated Fear score on the M.A.T.). They also seemed unable to deal with direct confrontation (this is indicated by a low integrated Pugnacity-sadism score on the M.A.T.). This group tended to be less intelligent (their 16 P.F. Factor B, concrete-thinking versus abstract-thinking, was low) and had some difficulty in making logical generalizations from concrete situations at hand. Finally, these individuals had a high sensitivity to emotional and physical pain as well as a tendency to be overprotected (their 16 P.F.
Factor I, tender-minded versus tough-minded, was high).

Pattern Number Two represented a frustrated upper-middle-class group. Persons with this pattern appeared to have rejected the work ethic (this is indicated by a very low unintegrated Career score on the M.A.T.), while either denying, or not fulfilling such needs as a desire for the "good things of life" such as color television, the fancy sports car, and so forth (this is indicated by a high unintegrated Narcism-comfort score on the M.A.T.), and a desire for sexual activity (this is indicated by a high unintegrated Mating score on the M.A.T.). This group also tended to be reserved and detached, indicating a certain objectivity and freedom from social needs (their 16 P.F. Factor A, reserved versus outgoing, was low). These people were somewhat jealous and insecure concerning how they were perceived by others (their 16 P.F. Factor L, trusting versus suspicious, was high). Finally, they tended to carry out activities themselves rather than seeking help (their 16 P.F. Factor Q2, group-dependent versus self-sufficient, was high). This independence may have been a result of a timidity and reluctance to ask others for aid.

Pattern Number Three represented a hostile rebel group. Persons with this pattern tended to be hostile (this is indicated by a high unintegrated Pugnacity-sadism score on the M.A.T.), and have unfulfilled status needs (this is indicated by a high unintegrated Assertiveness score on the M.A.T.). They also had some unmet need to be loved (this is indicated by a high unintegrated Sweetheart-spouse score on the M.A.T.), and tended to have a moderately low operating superego, reflecting rejection of organized
religion (this is indicated by a low integrated Superego score on the M.A.T.). This group was exhibitionistic, generally sought to be the center of conversations, and was quite impulsive (their 16 P.F. Factor F, sober versus happy-go-lucky, was high). A moderate amount of brashness and social confidence was also found (their 16 P.F. Factor H, shy versus venturesome, was high). Finally, this group was unpretentious and open in their interaction with others, and members sometimes exposed themselves to criticism because they shared negative as well as positive aspects of their thoughts and behaviors (their 16 P.F. Factor N, forthright versus astute, was low).

Pattern Number Four resembled the 16 P.F. secondary factor of Follower versus Leader. The motivation variables indicated moderate dependency needs (this is indicated by a high integrated Home-parental score on the M.A.T.), and a rather low operating superego, pointing to a rejection of organized religion (this is indicated by a low integrated Superego score on the M.A.T.). They tended to be concrete in their thinking (their 16 P.F. Factor B, concrete-thinking versus abstract-thinking, was low), extremely mild and unconcerned with dominating others (their 16 P.F. Factor E, humble versus assertive, was low), and somewhat shy, timid, and a bit anxious in the social setting. Finally, they tended to be a bit gullible, easy to get along with, and trusting of others (their 16 P.F. Factor L, trusting versus suspicious, was low).

The writers further pointed out other studies which have suggested relationships between personality and motivation on the one hand, and drug usage on the other.
Spevack, Pihl, and Sternthal (1970) found that psychedelic drug users were motivated primarily by a desire to conform.

Brill, Crumpton, and Grayson (1971) reported that frequent users of marijuana were more hostile or rebellious, tended to seek more stimulation, and had more long-standing emotional problems than nonusers.

Kleckner (1968) felt that there may be a specific personality factor constellation, syndrome, or type characteristic of the psychedelic drug user.

Caplan, Cobb, and French (1975) have shown a relationship between personality type, as measured by a Type A/Type B personality classification instrument, and success in smoking cessation.

In a study of male administrators, engineers, and scientists (n=200) from N.A.S.A., the National Aeronautics and Space Administration, they found that successful quitters scored low on Type A and high on Type B personality characteristics. That is to say, rather than being hard-driving, persistent, competitive, overloaded with work, or more involved in work, the successful quitters, the Type B's, were just the opposite.

The writers further point out that other study (McArthur, Waldron, Dickinson, 1958) has suggested that individuals with personality traits similar to Type A tend to be smokers rather than non-smokers.

Cattell and Krug (1967) have correlated personality, as measured by the 16 P.F., with smoking.

They found that undergraduate college students (male and female) who abstained from smoking (n=153) had different
personalities than smokers. The latter (n=103) scored significantly higher in Factor A (.05 level), tending to be outgoing as opposed to being reserved; higher in Factor F (.01 level), tending to be happy-go-lucky as opposed to sober; higher in Factor I (.05 level), tending to be tender-minded as opposed to being tough-minded; and higher in secondary factor QI (.05 level), tending to be extraverted as opposed to being introverted.

Further, those smokers whose mothers also smoked, scored significantly lower in Factor G (.05 level), tending to be expedient as opposed to conscientious; and lower in Factor O (.05 level), tending to be more self-assured as opposed to apprehensive.

Cattell and Krug interpreted these findings as follows: Guilt-proneness is negatively associated with smoking and reaches significance when the mother smokes. Consistent with this finding, smoking is consistently negatively related to superego strength, significantly when the mother smokes, that is, smoking mothers beget offspring of lower superego strength; which is to say, they lack conscience sensitivity.

Gross and Nerviano (1973), using three personality inventories, the 16 P.F., the Edwards Personal Preference Schedule, and the Personality Research Form, failed to distinguish between personality traits of completers (n=360) and dropouts (n=155) in an alcoholism treatment program.

They further pointed out that other studies (Miller, Pokorny, & Hanson, 1968; Fitzgerald, Pasewark, & Tanner, 1967; Pryor & Distefano, 1970) have found few, if any, personality traits capable
of distinguishing between completers and dropouts in alcoholic
treatment programs.

Ismail and Trachtman (1973) correlated personality, using
the 16 P.F., with level of physical fitness.

In comparing the fourteen most physically fit, from a group
of sixty middle-aged male university faculty and staff members,
with the fourteen least fit, they found that the two groups had
different personalities. The low-fitness group had a lower score
on Factor C, tending to be affected by feelings as opposed to being
emotionally stable; a lower score on Factor M, tending to be
practical as opposed to being imaginative; and a higher score on
Factor O, tending to be apprehensive as opposed to being self-
assured.

They further found that certain personality trait scores of
the low-fitness group were different before and after a four-month
(one and a half hours per day, three days per week) running pro-
gram. Following the treatment, the runners were significantly
higher in Factor C, they tended to be more emotionally stable as
opposed to being affected by feelings; significantly higher in
Factor M, they tended to be more imaginative as opposed to being
practical; significantly higher in Factor O, they tended to be
more apprehensive as opposed to being self-assured (Ismail and
Trachtman suggested two possible reasons for this reaction: One,
members of the low-fitness group had confronted the problem of
physical unfitness but hadn't conquered it; thus they felt
guilty. This was probably more important in an achievement-oriented,
university community than it would be in an ordinary community. Two,
all the time taken up by the physical fitness program cut into the
participants' usual work time and they might have felt guilty be-
cause they had been getting behind in their work); and significantly
higher, with more increase than any of the other three factors, on
Factor Q2, they tended to be more self-sufficient as opposed to
being group-dependent.

Ismail and Young (1977) in studying multivariate relation-
ships between selected biochemical and personality variables found
that high serum levels of cholesterol are related to low superego
strength (this indicated by a low Factor G score on the 16 P.F., a
tendency toward being expedient as opposed to being conscientious),
insecurity (this indicated by a high Factor 0 score on the 16 P.F.,
a tendency toward being apprehensive as opposed to being self-
assured), tension (this indicated by a high Factor Q4 score on the
16 P.F., a tendency toward being tense as opposed to being relaxed),
non-conformity (this indicated by readings on the conformity scale
of the Eysenck Personality Inventory), and emotional instability
(this indicated by readings on the neuroticism scale of the Eysenck
Personality Inventory). Cholesterol levels have been shown, of
course, to be related to both diet and exercise (Cooper, 1977,
pp. 32-34).

Jacobs (1975) correlated personality, using the 16 P.F.,
with sensation-seeking. He found, in studying undergraduate college
students, male and female, (n=200), that sensation-seekers had dif-
f erent personalities than non-sensation-seekers.

Sensation-seeking was correlated with a high score on
16 P.F. secondary factor, Exvía, a tendency to be extraverted as
opposed to being introverted; a high score on secondary factor, Cortertia, a tendency to be governed by reason as opposed to being governed by feelings; a high score on secondary factor, Independence, a tendency to be independent as opposed to being subdued; and a low score on secondary factor, Neuroticism, a tendency not to have difficulty making decisions as opposed to having such difficulty.

The thought here is that sensation-seeking might well comprise a portion of the motivation involved in the practice, or lack of practice, of certain health habits (see p. 30, paragraph 2).

Krug (1977), in discussing personality and motivation factors in preventive medicine, as measured by the 16 P.F. and M.A.T., made the following observation:

Some therapies and preventive strategies depend upon substantial patient cooperation, activity, and/or responsibility. Personality characteristics become, in such cases, of primary importance. Not only can they predict the degree to which the patient will conform to the desired regime, but sound strategies for increasing such compliance demand consideration of patient's personal characteristics. (p. 173)

This statement comes after years of 16 P.F. and M.A.T. research on Krug's part and is well worth noting.

Krug and Henry (1974) have correlated both personality, as measured by the 16 P.F., and motivation, as measured by the M.A.T., with adolescent drug use.

They found that high-school seniors and college freshmen of both sexes who engaged in the use of drugs, aerosols, amphetamines, barbiturates, glues, L.S.D., or marijuana, (n=171), had different personalities and/or motivations than non-drug users (n=392).

The drug users had a higher score on Factor E, tending to be more assertive as opposed to being humble; a higher score on
Factor F, tending to be more happy-go-lucky as opposed to being sober; a lower score on Factor G, tending to be more expedient as opposed to being conscientious; a higher score on Factor H, tending to be more venturesome as opposed to being shy; a higher score on Factor M, tending to be more imaginative as opposed to being practical; and a lower score on Factor N, tending to be more forthright as opposed to being astute.

On the M.A.T., drug users had indications of lower dependency needs (this reflected in low unintegrated Home-parental scores, and in low integrated Home-parental scores); some unchanneled hostility (this reflected in high unintegrated Pugnacity-sadism scores); greater conflict in developing satisfying and meaningful relationships with members of the opposite sex (this reflected in high unintegrated Sweetheart-spouse scores); less conscience development (this reflected in low integrated Superego scores); greater sexual gratification activity (this reflected in high integrated Mating scores); and, a somewhat puzzling finding, greater concern for social reputation (this reflected in high integrated Self-sentiment scores).

Lynn and Hampson (1975), using personality theories formulated by Eysenck and Cattell, proposed a method for measuring national differences in extraversion and neuroticism by looking at national prevalence rates of, among other things, alcoholism, caffeine consumption, calorie intake, and cigarette consumption.

In building their case, they cited a number of studies (Block, 1962; Golightly & Reinehr, 1969; Hoy, 1969; Masserman & Yum, 1946; Rosen & Gregory, 1965; Rosenberg, 1969; Vallance, 1965)
which suggest that neuroticism, as opposed to stability, is associated with alcoholism.

They further cited studies (Gooch, 1963; Lynn, 1973) which suggest that stability, as opposed to neuroticism, is associated with caffeine consumption.

They also referred to studies (Brandon, 1968; Hofling, 1963; Jones, 1924; Kalucy & Crisp, 1974; Morgan, 1965; Schachter, et al., 1968; Silverstone, 1968) which suggest that stability, as opposed to neuroticism, is associated with calorie intake (diet), and hence obesity.

In addition, they referred to studies (Cattell & Krug, 1967; Estabrook & Sommer, 1966; Evans, et al., 1967; Eysenck, 1965; Schubert, 1965; Smith, 1967, 1969) which suggest that extraversion, as opposed to introversion, is associated with cigarette consumption.

Meredith (1968) has correlated personality, as measured by the 16 P.F., the Adult Anxiety Scale, and the Edwards Personal Preference Schedule, with religious-belief systems. In his study of male and female college students (n=282), he found that religious people had different personalities than non-religious people.

This is relevant to the present study since religious belief systems, and concomitant practices designed to foster spiritual nurture, have been connected with the practice of health habits. Ruskjer (1978) has suggested that practice of religion itself ought to be viewed as a health habit.

Looking at 16 P.F. scores, Meredith found that the non-religious had a lower score on Factor A, tending to be more reserved as opposed to being outgoing; a lower score on Factor G,
tending to be more expedient as opposed to being conscientious; a higher Factor M, tending to be more imaginative as opposed to being practical; and a higher Ql, tending to be more experimenting as opposed to being conservative.

Meredith cites other studies (Butt & Signori, 1965; Cattell & Eber, 1964) which suggest that Factors G and Ql, respectively, are correlated with the Christian way of life and religious beliefs.

Further, Meredith failed to support the hypotheses that adherence to religious belief is related to closed-mindedness (Rokeach, 1960) or authoritarian tendencies (Jones, 1958).

Nerviano (1976) correlated personality, using the 16 P.F. and Jackson's Personality Research Form, with alcoholism.

He found that certain personality trait scores of diagnosed alcoholic males (n=366) were significantly different from normal adult scores on the same traits. Looking at 16 P.F. scores, alcoholics scored high on secondary factor, Extraversion, they tended to be extraverted as opposed to being introverted; and high on secondary factor, Anxiety, they tended to be anxious as opposed to being adjusted.

Nerviano then went on to use scores from Jackson's Personality Research Form, in connection with 16 P.F. scores, to tentatively characterize seven distinct subgroups of alcoholics in terms of known clinical syndromes.

He further cited other studies (Berzins, Ross, English, & Hailen, 1974; Brown, 1950; Goldstein & Linden, 1969; Lawlis & Rubin, 1971; Partington & Johnson, 1969; Skinner, Jackson, & Hoffman, 1974;
Whitelock, Overall, & Patrick, 1971) suggesting similarly identified subgroups of alcoholics.

Ryan (1973), in a unique study where an entire community, Greenfield, Iowa, attempted to stop smoking at the same time, has shown a relationship between personality, as measured by the 16 P.F., and a person's ability to stop smoking for at least thirty days. Subjects tested were non-student males under sixty years of age.

He found that upper-class smokers who stopped smoking for at least thirty days (n=41) had different personalities than upper-class smokers who refused to attempt to quit (n=53), though they did support the community effort by refraining from smoking in public places. The non-quitters scored lower on Factor G, tending to be more expedient as opposed to conscientious; higher on Factor Q2, tending to be more self-sufficient as opposed to group-dependent; lower on secondary factor, Exvia, tending to be more introverted as opposed to being extraverted; and higher on secondary factor, Anxiety, tending to be more anxious as opposed to being adjusted.

He further found that lower-class smokers who stopped smoking for at least thirty days (n=11) had different personalities than lower-class smokers who refused to attempt to quit (n=60), though they too supported the community effort by refraining from smoking in public places. The non-quitters scored lower on Factor M, tending to be more practical as opposed to being imaginative; and higher on secondary factor, Exvia, tending to be more extraverted as opposed to being introverted.

In addition, he found that when the upper and lower classes were combined, smokers who stopped smoking for at least thirty days
had different personalities than smokers who refused to attempt to quit (n=113). The non-quitters scored lower on Factor C, tending to be more affected by feelings as opposed to being emotionally stable; and lower on Factor Q3, tending to be more undisciplined as opposed to being controlled.

Though Ryan cited studies (Hunt & Matarazzo, 1970; Smith, 1970) which apparently take issue with the hypothesis that there is some underlying constitutional difference between smokers and non-smokers, he himself found that upper-class males under sixty years of age who had never smoked had different personalities than their addicted non-quitting counterparts. The never-quit smokers scored lower on Factor G, tending to be more expedient as opposed to being conscientious; and higher on Factor M, tending to be more imaginative as opposed to being practical. He reported no such differences for the lower class.

Shibuya (1974) correlated personality, as measured by the 16 P.F., with drug use (L.S.D. and marijuana).

However, he found that people who abstained from the use of drugs (n=20) had different personalities than drug users (L.S.D. n=20, marijuana n=20, total n=40). Drug users had a lower score on Factor G, tending to be more expedient as opposed to being conscientious; a higher score on Factor M, tending to be more imaginative as opposed to being practical; a higher score on Factor O, tending to be more apprehensive as opposed to being self-assured; and a higher score on Factor Q1, tending to be more experimenting as opposed to being conservative.

Tillman (1965) correlated personality, as measured by the
16 P.F., Allport's A-S Reaction Study, and the Kuder Preference Record, with level of physical fitness.

Studying junior and senior-high school boys (n=386) he found that those who finished a physical fitness test in the upper 15 percent of the group had significantly different personalities than those who finished the test in the lower 15 percent. Focusing on the 16 P.F. scores, students in the lower 15 percent had a lower score on Factor F, tending to be more sober as opposed to being happy-go-lucky; a higher score on Factor Q2, tending to be more self-sufficient as opposed to being group-dependent; and a higher score on Factor Q4, tending to be more tense as opposed to being relaxed.

Upon dividing the lower 15 percent into experimental and control groups and putting the experimental group through a nine-month physical fitness program, Tillman found only one personality variable out of the three tests administered which differentiated between the two groups. That was the Clerical Score on the Kuder Preference Record, a score which denotes interest.

Tillman pointed out the need for further work in this area, citing conflict between studies (Betz, 1956; Wells, 1958) which report correlations between personality variables and physical fitness, and findings (Weber, 1953) which fail to confirm such relationships.

Walton (1968) correlated personality, as measured by the 16 P.F., with alcoholism. He found that certain personality trait scores of diagnosed alcoholic males (n=38) were significantly different from normal adult scores on the same traits.
Alcoholics scored low on Factor C, tending to be affected by feelings as opposed to being emotionally stable; low on Factor F, tending to be sober (that's a trait designation, not a slip-of-the-lip) as opposed to being happy-go-lucky; low on Factor H, tending to be shy as opposed to being venturesome; high on Factor Q4, tending to be tense as opposed to being relaxed; high on secondary factor, Exvia, tending to be extraverted as opposed to being introverted; and high on secondary factor, Anxiety, tending to be anxious as opposed to being adjusted.

Walton further found differences between alcoholics, the "loss of control" or "Gamma" alcoholic (n=16) scoring lower on Factor C, tending to be more affected by feelings as opposed to being emotionally stable; lower on Factor F, tending to be more sober as opposed to being happy-go-lucky; lower on Factor H, tending to be more shy as opposed to being venturesome; higher on Factor Q2, tending to be more self-sufficient as opposed to being group-dependent; lower on motivational distortion, a measure of faking good on test responses in order to give a favorable impression; than the "inability to abstain" or "Delta" alcoholic (n=22).

Using the Personality Disorder Scale, Walton further found "loss of control" alcoholics to be significantly more fearful of their own impulses than "inability to abstain" alcoholics. Using the Hostility Scale, he found alcoholics to be significantly more hostile than normal individuals, and "Gamma" alcoholics significantly more hostile than "Delta" alcoholics.

Wardell and Mehra (1974) correlated personality, using the 16 P.F., with marijuana usage.
Studying male and female college students (n=521), he found that individuals who abstained from the use of marijuana had different personalities than marijuana users. Users scored lower on secondary factor, Exvia, tending to be introverts as opposed to being extraverts; and higher on secondary factor, Anxiety, tending to be anxious as opposed to being adjusted.

Weissbach, Auerbach, and Vogler (1973), using the Minnesota Multiphasic Personality Inventory and the 16 P.F., failed to distinguish between personality traits of heroin-knowledgeable (n=19) and heroin-naive (n=20) subjects. Males and females were included in the study. It should be noted, in connection with the study, however, that "heroin-knowledgeables" were defined as those who reported that they had used heroin at least once, though none were currently using it. And "heroin-naives" were defined as those who reported they had never used heroin, though they had used marijuana and psychedelic drugs.

In summary, then, the theoretical basis of this study is the theory that various personality and motivation traits are measurable. The associated theory, that those measurable traits are related to behavior, has here been demonstrated through a review of literature dealing with correlation of selected personality and motivation traits with the practice of specific health habits.

Clearly, discovery of relationships between personality and motivation variables of the 16 P.F. and M.A.T. on the one hand, and Adventist practice of twenty specific health habits on the other, is plausible.
Selection of the twenty health habits used as variables in this study is based upon the assumption of Divine inspiration in the contemporary setting, and the associated assumption of the Divine inspiration of Seventh-day Adventist author and educator Ellen G. White.

A representative comment from White is now given to illustrate her view relative to the importance of each of the twenty health habits under study.

1. Alcohol ingestion: abstinence.

In these days when vice and crime of every form are rapidly increasing, there is a tendency to become so familiar with existing conditions that we lose sight of their cause and of their significance. More intoxicating liquors are used today than have ever been used heretofore. In the horrible details of revolting drunkenness and terrible crime, the newspapers give but a partial report of the story of the resultant lawlessness. (White, 1949, p. 23)

2. Breakfast regularity: appropriation.

It is the custom and order of society to take a slight breakfast. But this is not the best way to treat the stomach. At breakfast time the stomach is in a better condition to take care of more food than at the second or third meal of the day. The habit of eating a sparing breakfast and a large dinner is wrong. Make your breakfast correspond more nearly to the heartiest meal of the day. (White, 1938, p. 173)

3. Caffeine ingestion: abstinence.

Tea and coffee do not nourish the system. Their effect is produced before there has been time for digestion and assimilation, and what seems to be strength is only nervous excitement. When the influence of the stimulant is gone, the unnatural force abates and the result is a corresponding degree of languor and debility. . . . Nature needs time to recuperate her exhausted energies. (White, 1938, p. 424)


Strenger, scharfer Kase sollte nicht genossen werden. (White,
In English: Strong, sharp cheese should not be eaten.

Der Genuss solcher Kasearten, die in Zersetzung übergegangen sind, ist schädlich; sie eignen sich nicht zur Nahrung. (White, 1926, p. 286) In English: The use of various kinds of cheese which are already in a state of deterioration is harmful; they are not fit for consumption.

5. Egg intake: moderation.

Let the diet reform be progressive. Let the people be taught how to prepare food. . . . Tell them that the time will soon come when there will be no safety in using eggs . . . because disease in animals is increasing in proportion to the increase of wickedness among men. (White, 1938, p. 349)


Moderate exercise every day will impart strength to the muscles, which without exercise become flabby and enfeebled. By active exercise in the open air every day, the liver, kidneys, and lungs also will be strengthened to perform their work. (White, 1948, 2:533)

7. Fresh-air intake: appropriation.

Air . . . will bless you with its invigorating influence if you will not refuse it entrance. . . . The free, pure air of heaven is one of the richest blessings we can enjoy. (White, 1952, p. 137)


. . . Jesus . . . did not urge . . . the necessity of ceaseless toil. . . . To His toilworn workers today as really as to His first disciples He speaks these words of compassion, "Come ye yourselves apart . . . and rest awhile." (White, 1923, p. 163)


The time will come when we may have to discard some of the articles of diet we now use, such as milk and cream. . . . (White, 1938, p. 208)


. . . the superfine white flour is not the best. Its use is neither healthful nor economical. Fine-flour bread is lacking in nutritive elements to be found in bread made from the whole wheat. It is a frequent cause of constipation and other unhealthful conditions. (White, 1938, p. 320)
11. Sleep regularity: appropriation.

Since the work of building up the body takes place during the hours of rest, it is essential . . . that sleep should be regular and abundant. (White, 1952, p. 143)


You should never let a morsel pass your lips between your regular meals. Eat what you ought, but eat it at one meal, and then wait until the next. (White, 1938, p. 180)


The religion of the Bible is not detrimental to the health of the body or the mind. The influence of the Spirit of God is the very best medicine that can be received by a sick man or woman. Heaven is all health. . . . (White, 1948, 3:172)


There are but few who realize that, in order to enjoy health and cheerfulness, they must have an abundance of sunlight . . . go out . . . in the open air, and live to enjoy health and happiness. (White, 1952, p. 138)

In view of the recognized relationship between overexposure to sunlight and skin cancer, it was felt that "moderation" would in this case be the appropriate designation.


If a third meal be eaten at all, it should be light, and several hours before going to bed. (White, 1938, p. 174)


Far too much sugar is ordinarily used in food. . . . Let those who advocate health reform strive earnestly to make it all that they claim it is. Let them discard everything detrimental to health. Use simple, wholesome food. Fruit is excellent. . . . Discard rich . . . desserts. . . . Plain, simple pie may serve as dessert, but when one eats two or three pieces merely to gratify an inordinate appetite, he unfits himself for the service of God. (White, 1938, p. 333)

17. Tobacco use: abstinence.

Tobacco, in whatever form it is used, tells upon the constitution. It is a slow poison. It affects the brain and numbs the sensibilities, so that the mind cannot clearly discern spiritual things, especially those truths which would have a tendency to correct this filthy indulgence. Those who use
tobacco in any form are not clear before God. In such a filthy practice it is impossible for them to glorify God in their bodies and spirits which are His. (White, 1949, p. 55)


In health and in sickness, pure water is one of Heaven's choicest blessings. Its proper use promotes health. It is the beverage which God provided to quench the thirst of animals and man. Drunk freely, it helps to supply the necessities of the system, and assists nature to resist disease. (White, 1938, p. 419)


You have flesh, but it is not good material. You are worse off for this amount of flesh. If you should each come down to a more spare diet, which would take from you twenty-five or thirty pounds of your gross flesh, you would be much less liable to disease. (White, 1948, 2:61)


It has been clearly presented to me that God's people are to take a firm stand against meat eating. Would God for thirty years give His people the message that if they desire to have pure blood and clear minds they must give up the use of flesh meat, if He did not want them to heed this message? By the use of flesh meat, the animal nature is strengthened and the spiritual nature weakened. (White, 1932, pp. 278-79)

Many more statements could be brought to bear on any or all of these areas, each with added nuance and detail. For purposes of this study, however, these will suffice.

Assumption of the Divine inspiration of health-and-faith educator Ellen G. White, comprises a portion of this study's theoretical framework.

Summary of Literature Reviewed

A number of sources with bearing on this study have been reviewed. Though not exhaustive, this review is reasonably representative of views in the literature which might be considered essential to a fair treatment of the subject under investigation.
With regard to the measurability of personality and motivation traits, it has been shown that numerous sources in the literature support the viability of the theory.

With regard to the correlation of 16 P.F. and M.A.T. traits with the practice of health habits, it has been shown that the literature, for the most part, supports this theory as well.

With regard to the importance of the twenty health habits under consideration, it has been shown that the writings of Ellen G. White support the assertion that these habits are of substantial consequence.
CHAPTER III

METHODOLOGY

Type of Research

This study employs an ex post facto research design calculated to yield certain information concerning relationships.

Population and Sample

The population for this study is comprised of those 5,280 baptized members of the forty-three British Columbia Seventh-day Adventist congregations located within approximately 250 miles of the Conference Lodge at Hope, B.C. as of January 1, 1979.

The sample is 325 members drawn by a random method from the population. The drawing was accomplished by using a program housed in the Andrews University Computing Center. This program assures that every church member has an equal chance of being chosen in the sample.

Instrumentation

To measure the variables involved, it was necessary, of course, to select appropriate instruments. After considering a number of instruments, it was felt that the following three would be most apropos: (1) the Sixteen Personality Factor Questionnaire (see appendix A), (2) the Motivation Analysis Test (see appendix B), and (3) the Adventist Lifestyle Questionnaire (see appendix C);
known as the 16 P.F., the M.A.T., and the A.L.Q., respectively.

Looking first at the 16 P.F. (Cattell, Eber, & Tatsuoka, 1970), one finds a test, suitable for self-administration to a large group of normal people, that evaluates the intensity of sixteen major personality source traits, or personality factors, in an individual.

The originator of the 16 P.F., Raymond B. Cattell, has identified each personality factor with both a letter and a pair of bipolar adjectives (see p. 3, paragraph 1). Cattell has used dual adjectives for each separate personality factor because, for example, a very low score on Factor Q2 is the presence of Group-dependency not just the absence of Self-sufficiency. Low scores are represented by the adjective to the left and high scores by its counterpart to the right. The adjectives have the advantages of being easy to remember and easy for anyone to understand. Their disadvantage is that they are tied to a complex of everyday nuances that may not be exactly appropriate or may be too narrow to convey the full meaning of the factor. Consequently, Cattell has given each factor a technical designation designed to encapsulate and freight its full meaning to the trained professional; for example, "Sizothymia" versus "Affectothymia," representing a low score and a high score, respectively, on Factor A. It should be kept in mind that a low score is actually preferable on certain factors while, as might be expected, a high score is preferable on others. Most would welcome, for example, a higher score on Factor C, "Emotionally stable," as opposed to the lower score, "Affected by feelings." At the same time, however, they would prefer the low score on Factor 0, for
example, "Self-assured," as opposed to the high score, "Apprehensive."

Scores are in "standard scores" of ten units (standard tens or "stens") with the average score designated as stens of five and six, which are one-half standard deviation below and above the mean, respectively, of normal adults. The *Handbook for the 16 P.F.* states that only when scores are at stens of four and lower or seven and higher are they to be considered as having departed from the average (Cattell, Eber, & Tatsuoka, 1970, p. 63).

The 16 P.F. is based on more than thirty-five years of research and development, documented in nearly 1,500 books and journal articles (Hussong, Sherman, & Ferris, 1977). It has been revised, updated, and improved several times since it first appeared in 1949. More than 18,000 normal individuals were systematically tested during the most recent standardizations (Institute for Personality and Ability Testing, 1978). The handbook supplements these with data on nearly 30,000 others from a variety of occupations, clinical diagnostic classes, and cultural groups.

Reliabilities for the sixteen primary scales average about .74, while validities average about .64 (Cattell, Eber, & Tatsuoka, 1970, pp. 30, 36) for a single form A of the 16 P.F. (The test is offered in a variety of forms.)

In addition to measuring the sixteen "primary" traits of personality used in this study, the 16 P.F. measures a number of "secondary" factors as well. These scores are derived from combinations of the primary sixteen factors.

Krug (1977, pp. 36-39) provides "capsule descriptions" of the 16 P.F. traits (see appendix A) which may be of help in
differentiating between the sixteen separate flavors of the 16 P.F.

By way of critique, the reader is referred to the discussion in chapter II, the subsection entitled, "Measurement of Personality and Motivation Traits," (see p. 23, paragraph 4).

Turning to the Motivation Analysis Test, one finds as well a test suitable for self-administration to a large group of normal people. The M.A.T. (Cattell, Horn, Sweney, & Radcliffe, 1964) measures need levels (designated "unintegrated drives") and satisfaction levels (designated "integrated drives") in each of ten important areas (see p. 4, paragraph 1). A conflict index for each area is obtained by examining the relative excess of need over satisfaction. More than that, the profile indicates whether the conflict is generated by excessive aspiration, inadequate achievement of satisfaction, or a combination of the two. In addition, the profile indicates the proportionate amount of one's total attention, or energy, being invested in any one of the ten areas at the time of the test.

Like the 16 P.F., the M.A.T. makes use of a standard ten score (sten). Here, as well, a person's score on any trait must be seven or higher, or four or lower, to be considered "high" or "low."

Though not as old or perhaps widely known as the 16 P.F., the M.A.T. has nevertheless seen use in a variety of settings. Its research and development are documented in scores of books and journal articles (Cattell, Horn, Sweney, & Radcliffe, 1964; Sweney, 1969).
Reliabilities for the ten scales average about .55 and validities about .65 (Cattell, Horn, Sweney, & Radcliffe, 1964, p. 5). While this reliability is somewhat low, the M.A.T. has wide usage. In evaluating the findings, it should be borne in mind that the data are not as reliable as one would desire.

Cattell, Horn, Sweney, and Radcliffe (1964, p. 3) provide "capsule descriptions" of the ten M.A.T. traits, also known as "dynamic structures" (see appendix B), which may be of help in understanding the thrust of each motivational dimension.

By way of critique, the reader is again referred to discussion in chapter II, the subsection entitled, "Measurement of Personality and Motivation Traits" (see p. 23, paragraph 4).

The search for a well-constructed, field-tested instrument designed to measure practice of the twenty health habits being considered (see p. 4, paragraph 3) was rewarded by discovery of Loma Linda University's (Loma Linda, California) Adventist Lifestyle Questionnaire, the A.L.Q. (see appendix C). Field-tested on more than 37,000 California Seventh-day Adventists, the A.L.Q. was, with minor adaptation, ideally suited to meet the needs of this investigation.

Measurement of behavioral commitment to the twenty health habits under consideration (see A.L.Q., questions 31-50, appendix C) takes place as follows: a person is considered to be following a given health habit if he or she marks either response three or four, indicating behavioral commitment, whereas those marking either response one or two, indicating lack of such commitment, are considered not to be following that habit.
Procedures for Collecting Data

Upon determination of just which members comprised the random sample of 325, data-gathering sites were selected in such a way that most subjects were within twenty-five miles of a testing location (see appendix F).

Arrangements were then made with the appropriate individuals for the date, time, and place of each data-gathering event. Given the geography connected with this study, it was decided that twelve such events should be held. Table 1 indicates the number of participants selected, the congregations, and total membership of the several churches located in each of the twelve areas.

Ministers with subjects residing in their pastorates were contacted via telephone and follow-up letter (see appendix E) with an explanation of the study and a request for assistance in securing the cooperation of those selected from among the members of their congregations. Appointments for data gathering were also confirmed with each pastor; date, time, and location. Each pastor was encouraged to personally contact each of the subjects residing in his district with a request that, as selected individuals, they participate in this important research effort. In all cases, ministers cooperated nicely. Some were particularly enthusiastic. Pastors stressed that the nature of the study was such that one hundred percent participation, the kind cooperation of each specially chosen church member, was essential to a building of the study's strength and hence its benefit for thousands of British Columbia Seventh-day Adventists.

In those cases where a subject selected was no longer a
## TABLE 1

### DATA-GATHERING EVENTS

<table>
<thead>
<tr>
<th>Site</th>
<th>Participants</th>
<th>Congregation</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
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<td></td>
<td>4</td>
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<td>23</td>
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<td>Kamloops</td>
<td>121</td>
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<td></td>
<td>5</td>
<td>Silver Creek</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Salmon Arm</td>
<td>72</td>
</tr>
<tr>
<td>No. 3</td>
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<td>Grandview</td>
<td>180</td>
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<tr>
<td></td>
<td>9</td>
<td>Vernon</td>
<td>171</td>
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<tr>
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<td>7</td>
<td>Armstrong</td>
<td>87</td>
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<tr>
<td></td>
<td>3</td>
<td>Silver Hills</td>
<td>51</td>
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<td>No. 4</td>
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<td>657</td>
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<tr>
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<td>12</td>
<td>Kelowna</td>
<td>156</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Winfield</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Orchard City</td>
<td>81</td>
</tr>
<tr>
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<td>7</td>
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<td>11</td>
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<td>2</td>
<td>Mission</td>
<td>67</td>
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<td></td>
<td>5</td>
<td>Hope</td>
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<td>White Rock</td>
<td>36</td>
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<tr>
<td></td>
<td>0</td>
<td>Ashcroft</td>
<td>14</td>
</tr>
</tbody>
</table>

| Total  | 325          | 43                  | 5,280      |

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part of the population, due to transfer, severance, or death, etc., the investigator supplied the appropriate pastor with an alternate name, selected from a list created for this purpose by the same Andrews Computing Center program, for inclusion in the study.

Prior to each data-gathering event participants received a personal letter reminding them of the appointment and thanking them in advance for their valuable contribution (see appendix E). Letters were hand signed by both the investigator and the subject's pastor.

The week before testing most participants received a reminder call from either their pastor, or in one case of pastoral transition, from the church's head elder.

The investigator then personally group administered the 16 P.F., M.A.T., and A.L.Q., making note of absent subjects and arranging for personal follow-up data gathering. All practical avenues were explored in an effort to secure 100 percent participation including contacts by mail, telephone, and personal visits both by pastors and the investigator. The final result was 205 sets of questionnaires completed on site, and sixty-six completed via the mail. Each set of questionnaires received by mail was accompanied by a signed affidavit stating that the questionnaires had been completed in accordance with all stipulations (see appendix E).

All participants were assured that in collecting and analyzing the data, persons would not be identified with their responses. This was strictly adhered to. Each set of questionnaires, comprised of 16 P.F., M.A.T., and A.L.Q., was given a number in order to prevent data mismatching. But there was no place on any questionnaire for a participant's name to appear,
and numbers were in no way connected with a given person's identity.

Thank-you letters were sent both to pastors and participants (see appendix E).

Again, the total number of returns was 271, or 83 percent of the sample. Fifty-four of the 325 randomly selected subjects refused to participate. In total, each of these was contacted a minimum of three times, by either the investigator or if it seemed more appropriate by the subject's pastor. It was felt that additional contacts would, in each of these cases, serve only to alienate. It should be noted that in addition to initial and follow-up contacts, up to five in some cases, via telephone and personal visit, on occasion of the final contact, each person refusing was offered the sum of ten dollars per hour to participate, as remuneration for time invested. Still, response was not forthcoming. Though thirteen gave no reason for refusing, eleven identified themselves as backslidden Adventists, though none of these cared to have their names removed from church-membership rosters. Eight cited chronic medical problems. Five had difficulty with English and refused an interpreter. Four, a logger, a leader in a local pentecostal group, and two persons involved in divorce proceedings, asserted that they had no time. Four based their refusal on the fact that they didn't believe in certain teachings of the Adventist Church and hence could not participate (notably they didn't believe in the inspiration of Mrs. Ellen G. White). Two could not read and refused to subject themselves to a potentially embarrassing situation. Two more had severe emotional problems and could not participate. An elderly subject declared herself to be both Presbyterian and
Seventh-day Adventist stating that she could not help one group for fear of offending the other, but that she wouldn't think of disassociating herself with either. Another person stated that her father was an Adventist minister and that she was disenchanted with the church, but not at this time ready to sever her ties. One lady refused because she felt that the only kind of study the church should be doing was a study of the life of Christ. One professional didn't feel comfortable sharing either his personal finances or his health-habit practice. And finally, one subject refused stating in all seriousness that anything having to do with computers must be sinful.

Beyond fifty-four solid refusals, a total of twenty-six persons could be classified as initial refusals. One to one encouragement here proved successful. Eight of these completed questionnaires during campmeeting. Three handicapped persons were tested at home as were ten other initial refusals, two of whom were tested through an interpreter, one whose husband had only recently died, one who was illiterate, one whose wife was convinced that the investigator was an East German communist spy, and one who consented to help upon learning that she was speaking with the grandson of the Adventist minister who had baptized her in the early 1930s. Two initial refusals came into the cooperative camp when offered ten dollars per hour. These, and three others, were among the mail-ins.

**Statistical Analysis**

In analyzing the data, canonical correlation analysis has been employed for the purpose of using the interrelationships among

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the variables, as indicated by the intercorrelation matrices which the computer program has output (Cooley & Lohnes, 1971, pp. 168-200; Kendall, 1975, pp. 61-70; Tatsuoka, 1971, pp. 177-93). Because the stability of any given intercorrelation matrix requires the use of at least ten times as many subjects as variables, it was necessary to limit the total number of variables used in any canonical run to twenty-seven, one tenth of 271. This, in turn, made it necessary to look at the data in a variety of combinations in order to allow the emergence of as many existing relationships as would be practically possible in a study of this nature; hence twenty canonical runs. For the analysis, in each case, the variables of set one are a given number of the fifty-six personality-motivation variables of the 16 P.F. and M.A.T. The variables of set two are a given number of the twenty health-habit variables of the A.L.Q. The first four hypotheses correlate personality and health-habit practice, hypotheses five through eight correlate unintegrated motivation with health-habit practice, nine through twelve correlate integrated motivation with health-habit practice, thirteen through sixteen correlate total motivation with health-habit practice, while hypotheses seventeen through twenty correlate motivational conflict with health-habit practice. In each of these five sets of four hypotheses each, the first hypothesis correlates personality or motivation with the first ten health habits (1-10), while the second hypothesis correlates personality or motivation with the last ten health habits (11-20). The third hypothesis, examining as it does the internal ten health habits (6-15), and the fourth hypothesis, analyzing as it does the external ten health habits (1-5, 16-20), provide a second look at
the data which reveals a more complete picture of the relationships and hence a clearer understanding of the tendencies present. With this approach, should one personality variable, for example, manifest itself in all four canonical runs where it could potentially appear, it would seem reasonable to conclude that that variable would surface as a heavily weighted item if the sample size was large enough to permit a single canonical run correlating the sixteen personality factors with all twenty health habits at once.

Canonical correlation analysis obtains a linear combination of the set one variables and a linear combination of the set two variables such that the correlation between these two resulting variables, the canonical correlation, is a maximum. In each of the twenty runs, the program output ten such canonical correlations of decreasing magnitude and importance. Only those statistically significant at the .05 level have been considered. In interpreting the canonical functions, only those variables in each set have been noted whose loading is at least 50 percent of the maximum loading of that set.

Limitations of the Study

1. Studies of this nature do not permit conclusions of causality, a reasoning from cause to effect. They do, however, point to observable bonds between variables found to be significantly related to one another.

2. Personality, motivation, and health-habit variables other than the ones selected for scrutiny in this study certainly exist. Those selected are being investigated, however, for reasons already set forth.
3. This study is limited to the population described. Therefore, findings cannot be directly applied to other Seventh-day Adventist populations.

4. Findings discovered as a result of this investigation are limited to those which one might expect when employing the statistical technique used in this study.

Summary of Chapter III

Chapter III has presented the research design and methodology of a study of selected personality and motivation variables related to behavioral commitment to certain health teachings of Seventh-day Adventists. The population and sample, instrumentation, procedures for collecting data, statistical analysis, and limitations of the study have been discussed.
CHAPTER IV

FINDINGS

The first three chapters have described the rationale and the methodology for a research study on the subject of the relationship between personality-motivation and health-habit practice in Seventh-day Adventists. This chapter presents the findings of the research.

The population selected for the study consisted of the 5,280 baptized British Columbia Seventh-day Adventist church members living within approximately 250 miles of the Conference Lodge at Hope, B.C., a center for Adventist health ministries in the province (see appendix F). From these church members a sample of 325 was selected by a random method. Data were collected from 271 of these members and analyzed to determine the findings in the present chapter.

The underlying hypothesis upon which the research was based is that selected personality and motivation variables are related to behavioral commitment to certain health teachings of Seventh-day Adventists as evidenced by the practice of correspondent health habits. From this broad major hypothesis, twenty research hypotheses were set forth. These concern the canonical correlations expected between various combinations of personality-motivation variables on the one hand and various combinations of health-habit variables on the other.
Information about the Data

When the research design for this study was constructed, no hypothesis was formulated concerning levels of behavioral commitment to be found in British Columbia Seventh-day Adventists, or the proportion of church members who might be identified as followers, or non-followers, of the health habits being considered. The assumption was made that some members were practicing while others were not, and that such practice could be measured. The only hypotheses that were formulated concerned possible canonical correlations between such practice, or lack thereof, and personality-motivation.

Now, however, with the results of the study in hand, it is of interest to note what the members' responses reveal with regard to identification of the least practiced health habits. As table 2 reveals, four health habits, (1) Spiritual nurture, (2) Supper intake, (3) Vegetarian lifestyle, and (4) Sweets intake, are being practiced by 50 percent or less of the church members studied. Table 3 graphs the findings, while table 4 gives more complete data on item response. Table 5 indicates that the vast majority of respondents reported that prior to completion of the questionnaires, they were aware that the church recognized the value of the health habits being considered. Hence, lack the health-habit practice cannot, for the most part, be attributed to ignorance concerning the church's teachings. The habits of milk and cheese selection were the least understood. But even with these, 83 percent, in both cases, indicated awareness.

Of particular interest is the health-habit practice of the
<table>
<thead>
<tr>
<th>Health Habit</th>
<th>Behavioral Commitment*</th>
<th>(Variable Number)</th>
<th>% Not Following</th>
<th>(%) Following</th>
</tr>
</thead>
<tbody>
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<td>Spiritual nurture</td>
<td>app</td>
<td>(13)</td>
<td>68</td>
<td>(32)</td>
</tr>
<tr>
<td>Supper intake</td>
<td>mod</td>
<td>(15)</td>
<td>66</td>
<td>(34)</td>
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<td>Vegetarian lifestyle</td>
<td>app</td>
<td>(20)</td>
<td>62</td>
<td>(38)</td>
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<td>Sweets intake</td>
<td>mod</td>
<td>(16)</td>
<td>50</td>
<td>(50)</td>
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<td>mod</td>
<td>(9)</td>
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<td>(55)</td>
</tr>
<tr>
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<td>(58)</td>
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<td>Snack ingestion</td>
<td>abs</td>
<td>(12)</td>
<td>41</td>
<td>(59)</td>
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<td>Leisure activity</td>
<td>app</td>
<td>(8)</td>
<td>40</td>
<td>(60)</td>
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<td>(62)</td>
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<td>(63)</td>
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<td>Exercise regularity</td>
<td>app</td>
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<td>(72)</td>
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<td>Sleep regularity</td>
<td>app</td>
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<td>(73)</td>
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<tr>
<td>Tobacco use</td>
<td>abs</td>
<td>(17)</td>
<td>4</td>
<td>(96)</td>
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* abs: abstinence, mod: moderation, app: appropriation
TABLE 3

GRAPH: PERCENTAGE NOT FOLLOWING

Total Sample n=271

Health Habits
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<tr>
<th>Health Habit</th>
<th>(Variable Number)</th>
<th>% Response to Item 1</th>
<th>% Response to Item 2</th>
<th>% Response to Item 3</th>
<th>% Response to Item 4</th>
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<td>Sweets intake</td>
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<tr>
<td>Water intake</td>
<td>(18)</td>
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<td>27</td>
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<tr>
<td>Sleep regularity</td>
<td>(11)</td>
<td>14</td>
<td>13</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Breakfast regularity</td>
<td>(2)</td>
<td>8</td>
<td>13</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>Refined-food intake</td>
<td>(10)</td>
<td>8</td>
<td>10</td>
<td>38</td>
<td>44</td>
</tr>
<tr>
<td>Alcohol ingestion</td>
<td>(1)</td>
<td>7</td>
<td>6</td>
<td>30</td>
<td>57</td>
</tr>
<tr>
<td>Sunlight exposure</td>
<td>(14)</td>
<td>3</td>
<td>8</td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td>Fresh-air intake</td>
<td>(7)</td>
<td>1</td>
<td>8</td>
<td>22</td>
<td>69</td>
</tr>
<tr>
<td>Weight control</td>
<td>(19)</td>
<td>3</td>
<td>6</td>
<td>32</td>
<td>59</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>(17)</td>
<td>1</td>
<td>3</td>
<td>24</td>
<td>72</td>
</tr>
</tbody>
</table>
study's several age groups as noted in tables 6-26. With regard to health-habit practice, these findings indicate that differences exist between various sub-groups in the population with virtually all groups in need of one or more forms of health ministry.

Of additional interest is the health-habit practice of the study's several occupational groups as noted in table 27 (see appendix D).

Fifty-seven percent of the sample was female, 43 percent male. Eighty-two percent attended church at least three times per month, 10 percent at least once per month, and 8 percent less than once per month. When asked whether or not a health professional (physician, dentist, nurse, or health educator, etc.) played a major role in their conversion experience, 10 percent said yes. Twenty-three percent reported that the health message played a major role in their conversion experience.

**Correlation between a Combination of Personality-Motivation Variables and a Combination of Health-Habit Variables**

So far this chapter has been occupied with a direct examination of some information gathered in the study. The major purpose of this investigation, however, is to explore certain of the relationships that exist between the selected personality-motivation variables and health-habit variables.

Since both personality-motivation and health-habit practice are multidimensional, it is reasonable to ask whether the combination of dimensions of personality-motivation is significantly related to the combination of dimensions involved in behavioral commitment to S.D.A. health teaching.
### TABLE 6

**HEALTH-HABIT PRACTICE BY AGE GROUP**
(Percentage Not Following)

<table>
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<tr>
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</thead>
<tbody>
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<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
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<td>Percentage of Sample:</td>
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<td>19.9</td>
<td>13.3</td>
<td>10.3</td>
<td>15.5</td>
<td>07.4</td>
<td>04.8</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Spiritual nurture (13)</td>
<td>89</td>
<td>79</td>
<td>76</td>
<td>78</td>
<td>54</td>
<td>52</td>
<td>45</td>
<td>23</td>
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<tr>
<td>Supper intake (15)</td>
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<td>71</td>
<td>85</td>
<td>69</td>
<td>68</td>
<td>48</td>
<td>50</td>
<td>31</td>
</tr>
<tr>
<td>Vegetarian lifestyle (20)</td>
<td>52</td>
<td>74</td>
<td>78</td>
<td>56</td>
<td>57</td>
<td>62</td>
<td>50</td>
<td>38</td>
</tr>
<tr>
<td>Sweets intake (16)</td>
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<td>48</td>
<td>67</td>
<td>32</td>
<td>48</td>
<td>45</td>
<td>46</td>
</tr>
<tr>
<td>Milk selection (9)</td>
<td>57</td>
<td>35</td>
<td>46</td>
<td>36</td>
<td>21</td>
<td>43</td>
<td>65</td>
<td>77</td>
</tr>
<tr>
<td>Egg intake (5)</td>
<td>32</td>
<td>56</td>
<td>48</td>
<td>44</td>
<td>36</td>
<td>40</td>
<td>45</td>
<td>23</td>
</tr>
<tr>
<td>Snack ingestion (12)</td>
<td>55</td>
<td>41</td>
<td>48</td>
<td>33</td>
<td>29</td>
<td>45</td>
<td>25</td>
<td>15</td>
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<td>Leisure activity (8)</td>
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<td>35</td>
<td>56</td>
<td>36</td>
<td>43</td>
<td>45</td>
<td>46</td>
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<td>Cheese selection (4)</td>
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<td>44</td>
<td>43</td>
<td>36</td>
<td>25</td>
<td>15</td>
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<td>Caffeine ingestion (3)</td>
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<td>56</td>
<td>31</td>
<td>33</td>
<td>29</td>
<td>29</td>
<td>30</td>
<td>23</td>
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<td>Exercise regularity (6)</td>
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<td>28</td>
<td>53</td>
<td>36</td>
<td>29</td>
<td>15</td>
<td>38</td>
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<tr>
<td>Water intake (18)</td>
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<td>35</td>
<td>25</td>
<td>21</td>
<td>17</td>
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<td>15</td>
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<td>Sleep regularity (11)</td>
<td>41</td>
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<td>24</td>
<td>19</td>
<td>18</td>
<td>33</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Breakfast regularity (2)</td>
<td>27</td>
<td>26</td>
<td>30</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>5</td>
<td>23</td>
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<tr>
<td>Refined-food intake (10)</td>
<td>23</td>
<td>6</td>
<td>28</td>
<td>8</td>
<td>14</td>
<td>7</td>
<td>25</td>
<td>54</td>
</tr>
<tr>
<td>Alcohol ingestion (1)</td>
<td>20</td>
<td>24</td>
<td>13</td>
<td>11</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Sunlight exposure (14)</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>19</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>0</td>
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<tr>
<td>Fresh-air intake (7)</td>
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<td>6</td>
<td>9</td>
<td>25</td>
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<td>Weight control (19)</td>
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<td>6</td>
<td>14</td>
<td>14</td>
<td>10</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Tobacco use (17)</td>
<td>9</td>
<td>6</td>
<td>6</td>
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<td>0</td>
<td>0</td>
<td>5</td>
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</tbody>
</table>

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TABLE 7
HABIT: SPIRITUAL NURTURE

68% of Total Sample Not Following

Percentage Not Following

<table>
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<tr>
<th>Age</th>
<th>n</th>
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</thead>
<tbody>
<tr>
<td>&lt;20</td>
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<td>20-29</td>
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<td>30-39</td>
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<tr>
<td>40-49</td>
<td>36</td>
</tr>
<tr>
<td>50-59</td>
<td>28</td>
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<tr>
<td>60-69</td>
<td>42</td>
</tr>
<tr>
<td>70-79</td>
<td>20</td>
</tr>
<tr>
<td>=&gt;80</td>
<td>13</td>
</tr>
</tbody>
</table>
TABLE 8
HABIT: SUPPER INTAKE

66% of Total Sample Not Following

Percentage Not Following

<table>
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<tr>
<th>Age</th>
<th>&lt;20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
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</tbody>
</table>

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TABLE 9

HABIT: VEGETARIAN LIFESTYLE

62% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>&lt; 20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
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<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

Age: < 20 20-29 30-39 40-49 50-59 60-69 70-79 =>80

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### TABLE 10

**HABIT: SWEETS INTAKE**

50% of Total Sample Not Following

<table>
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<th>n:</th>
</tr>
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<td>&lt; 20</td>
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<td>90 -</td>
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<td>34</td>
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<tr>
<td>80 -</td>
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<td>54</td>
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<td>70 -</td>
<td>40-49</td>
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<td>28</td>
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<td>50 -</td>
<td>60-69</td>
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<td>40 -</td>
<td>70-79</td>
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<tr>
<td>30 -</td>
<td>=&gt;80</td>
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</table>

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TABLE 11
HABIT: MILK SELECTION

45% of Total Sample Not Following

<table>
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<th>Age:</th>
<th>n:</th>
</tr>
</thead>
<tbody>
<tr>
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<td>60-69</td>
<td>42</td>
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<tr>
<td>40 -</td>
<td>70-79</td>
<td>20</td>
</tr>
<tr>
<td>30 -</td>
<td>=&gt;80</td>
<td>13</td>
</tr>
<tr>
<td>20 -</td>
<td></td>
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<td>0 -</td>
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</table>

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TABLE 12
HABIT: EGG INTAKE

42% of Total Sample Not Following

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<th>Percentage Not Following</th>
<th>Age:</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 -</td>
<td>&lt; 20</td>
<td>44</td>
</tr>
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<td>90 -</td>
<td>20-29</td>
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<td>50 -</td>
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<td>40 -</td>
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</tr>
<tr>
<td>30 -</td>
<td>=&gt;80</td>
<td>13</td>
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</tbody>
</table>

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TABLE 13
HABIT: SNACK INGESTION

41% of Total Sample Not Following

Percentage Not Following

Age: < 20 20-29 30-39 40-49 50-59 60-69 70-79 =>80
n: 44 34 54 36 28 42 20 13

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TABLE 14

HABIT: LEISURE ACTIVITY

40% of Total Sample Not Following

| Percentage Not Following | 100 | 90 | 80 | 70 | 50 | 40 | 30 | 20 | 10 | 0 |
|--------------------------|-----|----|----|----|----|----|----|----|----|----|----|
| Age:                     | < 20| 20-29| 30-39| 40-49| 50-59| 60-69| 70-79| =>80 |
| n:                       | 44  | 34  | 54  | 36  | 28  | 42  | 20  | 13  |

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TABLE 15

HABIT: CHEESE SELECTION

38% of Total Sample Not Following

Percentage Not Following

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<thead>
<tr>
<th>Age</th>
<th>&lt; 20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
</tr>
</thead>
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<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

56% 36% 35% 44% 43% 36% 25% 15%
TABLE 16

HABIT: CAFFEINE INGESTION

37% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>Age:</th>
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<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
</tr>
</thead>
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<td>54</td>
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TABLE 17
HABIT: EXERCISE REGULARITY

31% of Total Sample Not Following

Percentage Not Following

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<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
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</thead>
<tbody>
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<td>n</td>
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<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
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</table>

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# TABLE 18

**HABIT: WATER INTAKE**

28% of Total Sample Not Following

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<tr>
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<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
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</thead>
<tbody>
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<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

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TABLE 19
HABIT: SLEEP REGULARITY
27% of Total Sample Not Following

Percentage Not Following

Age: < 20  20-29  30-39  40-49  50-59  60-69  70-79  =>80
n :  44    34    54    36    28    42    20    13
TABLE 20

HABIT: BREAKFAST REGULARITY

21% of Total Sample Not Following

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<tr>
<th>Age</th>
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<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>80+</th>
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</thead>
<tbody>
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<td>n</td>
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<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

Percentage Not Following

- Age: <20, 26%
- Age: 20-29, 27%
- Age: 30-39, 30%
- Age: 40-49, 14%
- Age: 50-59, 14%
- Age: 60-69, 14%
- Age: 70-79, 5%
- Age: 80+, 23%
TABLE 21

HABIT: REFINED-FOODS INTAKE

18% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Age</th>
<th>&lt; 20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

Percentage Not Following

- 100 - 90 - 80 - 70 - 60 - 50 - 40 - 30 - 20 - 10 - 0 -
TABLE 22
HABIT: ALCOHOL INGESTION
13% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>34</td>
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<td></td>
<td></td>
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<tr>
<td>30-39</td>
<td>54</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>40-49</td>
<td>36</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td>42</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>70-79</td>
<td>20</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>=&gt;80</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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TABLE 23

HABIT: SUNLIGHT EXPOSURE

11% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>&lt;20</td>
<td>20-29</td>
<td>30-39</td>
<td>40-49</td>
<td>50-59</td>
<td>60-69</td>
<td>70-79</td>
<td>=&gt;80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n:</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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TABLE 24
HABIT: FRESH-AIR INTAKE
9% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Age</th>
<th>&lt;20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>=&gt;80</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>
TABLE 25
HABIT: WEIGHT CONTROL
9% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>&lt; 20</td>
<td>20-29</td>
<td>30-39</td>
<td>40-49</td>
<td>50-59</td>
<td>60-69</td>
<td>70-79</td>
<td>=&gt;80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n:</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 26
HABIT: TOBACCO USE

4% of Total Sample Not Following

<table>
<thead>
<tr>
<th>Percentage Not Following</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td>&lt; 20</td>
<td>20-29</td>
<td>30-39</td>
<td>40-49</td>
<td>50-59</td>
<td>60-69</td>
<td>70-79</td>
<td>=&gt;80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n:</td>
<td>44</td>
<td>34</td>
<td>54</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>20</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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An answer to this question can be obtained through the use of canonical correlation analysis. The basic idea of this analysis is that two linear composites, or linear combinations of variables, are formed (one for the personality-motivation variables and one for the health-habit variables) and correlated. This correlation coefficient is called the canonical correlation coefficient. The square of this coefficient is an estimate of the variance shared by the two composites.

In canonical correlation analysis there can be more than one set of equations. The method actually extracts the first and largest source of variance, yielding the canonical correlation coefficient which is an index of the relation between the two composites based on the largest source of variance. Then the next greatest source of variance, left in the data after the first source is extracted and independent from the first source, is analyzed, and the second canonical correlation coefficient is found which is smaller than the first and indicates the relation between the two sets of variables due to this second source of variance. This continues for as many sets of equations as there are in the smaller set, here ten in each case.

Testing of the Hypotheses

The hypotheses set forth in chapter I are now examined one by one. They are here stated in null form so that a determination can be made whether they should be retained or rejected from a statistical standpoint.

Hypothesis 1. There is no significant canonical correlation
between a linear combination of personality variables A, B, C, E, F, G, H, I, L, M, N, O, Q1, Q2, Q3, Q4 on the one hand, and a linear combination of health-habit variables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 on the other.

Table 28 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 1. All numbers have been rounded to three decimal places.

**TABLE 28**

**CANONICAL CORRELATION OF HYPOTHESIS 1**

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.491*</td>
<td>.241</td>
<td>224.022</td>
<td>160</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2</td>
<td>.382</td>
<td>.146</td>
<td>153.361</td>
<td>135</td>
<td>.133</td>
</tr>
<tr>
<td>3</td>
<td>.362</td>
<td>.131</td>
<td>112.946</td>
<td>112</td>
<td>.462</td>
</tr>
<tr>
<td>4</td>
<td>.309</td>
<td>.096</td>
<td>76.880</td>
<td>91</td>
<td>.854</td>
</tr>
<tr>
<td>5</td>
<td>.250</td>
<td>.063</td>
<td>51.214</td>
<td>72</td>
<td>.967</td>
</tr>
<tr>
<td>6</td>
<td>.231</td>
<td>.053</td>
<td>34.613</td>
<td>55</td>
<td>.983</td>
</tr>
<tr>
<td>7</td>
<td>.178</td>
<td>.032</td>
<td>20.507</td>
<td>40</td>
<td>.996</td>
</tr>
<tr>
<td>8</td>
<td>.156</td>
<td>.024</td>
<td>12.231</td>
<td>27</td>
<td>.993</td>
</tr>
<tr>
<td>9</td>
<td>.120</td>
<td>.014</td>
<td>5.922</td>
<td>16</td>
<td>.989</td>
</tr>
<tr>
<td>10</td>
<td>.093</td>
<td>.009</td>
<td>2.212</td>
<td>7</td>
<td>.947</td>
</tr>
</tbody>
</table>

* significant at the .001 level
The data in table 28 indicate that there is one canonical correlation significant at the .05 level, in fact significant beyond the .001 level. The null hypothesis, therefore, is rejected. With respect to hypothesis 1, these findings indicate that personality, as composed of the combination of sixteen dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 24.1 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function. Table 29 presents the first function weights associated with the personality (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 29 reveal that Factors F and C are the primary dimensions composing the personality set, and that Habits 3 and 10 are the primary variables involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on Factor F (tending to be more sober as opposed to being happy-go-lucky) and higher on Factor C (tending to be more emotionally stable as opposed to being affected by feelings) tend to follow S.D.A. health teaching with regard to caffeine ingestion and refined-food intake.

Hypothesis 2. There is no significant canonical correlation between a linear combination of personality variables A, B, C, E, F,
TABLE 29
FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 1

<table>
<thead>
<tr>
<th>Personality Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-.129</td>
<td>1</td>
<td>.245</td>
</tr>
<tr>
<td>B</td>
<td>.423</td>
<td>2</td>
<td>.120</td>
</tr>
<tr>
<td>C</td>
<td>.805</td>
<td>3</td>
<td>.502</td>
</tr>
<tr>
<td>E</td>
<td>-.343</td>
<td>4</td>
<td>.104</td>
</tr>
<tr>
<td>F</td>
<td>-1.609</td>
<td>5</td>
<td>-.012</td>
</tr>
<tr>
<td>G</td>
<td>.296</td>
<td>6</td>
<td>-.060</td>
</tr>
<tr>
<td>H</td>
<td>.732</td>
<td>7</td>
<td>-.094</td>
</tr>
<tr>
<td>I</td>
<td>-.120</td>
<td>8</td>
<td>-.195</td>
</tr>
<tr>
<td>L</td>
<td>-.222</td>
<td>9</td>
<td>.083</td>
</tr>
<tr>
<td>M</td>
<td>-.445</td>
<td>10</td>
<td>.443</td>
</tr>
<tr>
<td>N</td>
<td>-.032</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>.379</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>-.083</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>-.317</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>.312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>.287</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

G, H, I, L, M, N, O, Q1, Q2, Q3, Q4 on the one hand and a linear combination of health-habit variables 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 on the other.

Table 30 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 2. All numbers have been rounded to three decimal places.

The data in table 30 indicate that there is one canonical correlation significant at the .05 level, in fact significant at
the .021 level. The null hypothesis, therefore, is rejected.

TABLE 30
CANONICAL CORRELATION OF HYPOTHESIS 2

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.483*</td>
<td>.233</td>
<td>197.927</td>
<td>160</td>
<td>.021</td>
</tr>
<tr>
<td>2</td>
<td>.369</td>
<td>.136</td>
<td>129.770</td>
<td>135</td>
<td>.615</td>
</tr>
<tr>
<td>3</td>
<td>.314</td>
<td>.099</td>
<td>92.336</td>
<td>112</td>
<td>.911</td>
</tr>
<tr>
<td>4</td>
<td>.281</td>
<td>.079</td>
<td>65.668</td>
<td>91</td>
<td>.977</td>
</tr>
<tr>
<td>5</td>
<td>.239</td>
<td>.057</td>
<td>44.558</td>
<td>72</td>
<td>.994</td>
</tr>
<tr>
<td>6</td>
<td>.200</td>
<td>.040</td>
<td>29.434</td>
<td>55</td>
<td>.997</td>
</tr>
<tr>
<td>7</td>
<td>.185</td>
<td>.034</td>
<td>18.948</td>
<td>40</td>
<td>.998</td>
</tr>
<tr>
<td>8</td>
<td>.176</td>
<td>.031</td>
<td>10.013</td>
<td>27</td>
<td>.999</td>
</tr>
<tr>
<td>9</td>
<td>.077</td>
<td>.006</td>
<td>1.908</td>
<td>16</td>
<td>1.000</td>
</tr>
<tr>
<td>10</td>
<td>.038</td>
<td>.001</td>
<td>.379</td>
<td>7</td>
<td>1.000</td>
</tr>
</tbody>
</table>

* significant at the .021 level

With respect to hypothesis 2, these findings indicate that personality, as composed by the combination of sixteen dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 23.3 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.
Table 31 presents the first function weights associated with the personality (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 31 reveal that Factors H, Q3, G, Q1, F, and B are the primary dimensions composing the personality set, and that Habit 13 is the primary variable involved in the health-habit set of the first significant function.

<table>
<thead>
<tr>
<th>Personality Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-.114</td>
<td>11</td>
<td>-.122</td>
</tr>
<tr>
<td>B</td>
<td>-.527</td>
<td>12</td>
<td>.170</td>
</tr>
<tr>
<td>C</td>
<td>-.415</td>
<td>13</td>
<td>.574</td>
</tr>
<tr>
<td>E</td>
<td>-.043</td>
<td>14</td>
<td>-.128</td>
</tr>
<tr>
<td>F</td>
<td>-.549</td>
<td>15</td>
<td>.112</td>
</tr>
<tr>
<td>G</td>
<td>.616</td>
<td>16</td>
<td>.032</td>
</tr>
<tr>
<td>H</td>
<td>.986</td>
<td>17</td>
<td>.196</td>
</tr>
<tr>
<td>I</td>
<td>.077</td>
<td>18</td>
<td>.133</td>
</tr>
<tr>
<td>L</td>
<td>-.367</td>
<td>19</td>
<td>-.215</td>
</tr>
<tr>
<td>M</td>
<td>.045</td>
<td>20</td>
<td>-.076</td>
</tr>
<tr>
<td>N</td>
<td>.466</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>.338</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>-.561</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>.198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>.670</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>.122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This canonical function indicates that those Seventh-day Adventists who score higher on Factor H (tending to be more venturesome as opposed to being shy), higher on Factor Q3 (tending to be more controlled as opposed to being undisciplined), higher on Factor G (tending to be more conscientious as opposed to being expedient), lower on Factor Q1 (tending to be more conservative as opposed to being experimenting), lower on Factor F (tending to be sober as opposed to being happy-go-lucky), and lower on Factor B (tending to be concrete-thinking as opposed to being abstract-thinking) tend to follow S.D.A. health teaching with regard to spiritual nurture.

Hypothesis 3. There is no significant canonical correlation between a linear combination of personality variables A, B, C, E, F, G, H, I, L, M, N, O, Q1, Q2, Q3, Q4 on the one hand, and a linear combination of health-habit variables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 on the other.

Table 32 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 3. All numbers have been rounded to three decimal places.

The data in table 32 indicate that there is one canonical correlation significant at the .05 level, in fact significant beyond the .001 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 3, these findings indicate that personality, as composed by the combination of sixteen dimensions, is significantly related to the health habits selected, and that the
proportion of variance shared by the set of equations significantly related is 24.3 percent.

### TABLE 32
**CANONICAL CORRELATION OF HYPOTHESIS 3**

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.493*</td>
<td>.243</td>
<td>225.083</td>
<td>160</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2</td>
<td>.414</td>
<td>.171</td>
<td>153.672</td>
<td>135</td>
<td>.129</td>
</tr>
<tr>
<td>3</td>
<td>.349</td>
<td>.122</td>
<td>105.383</td>
<td>112</td>
<td>.661</td>
</tr>
<tr>
<td>4</td>
<td>.294</td>
<td>.086</td>
<td>72.059</td>
<td>91</td>
<td>.926</td>
</tr>
<tr>
<td>5</td>
<td>.233</td>
<td>.054</td>
<td>48.905</td>
<td>72</td>
<td>.981</td>
</tr>
<tr>
<td>6</td>
<td>.220</td>
<td>.048</td>
<td>34.574</td>
<td>55</td>
<td>.983</td>
</tr>
<tr>
<td>7</td>
<td>.172</td>
<td>.030</td>
<td>21.868</td>
<td>40</td>
<td>.991</td>
</tr>
<tr>
<td>8</td>
<td>.166</td>
<td>.028</td>
<td>14.173</td>
<td>27</td>
<td>.980</td>
</tr>
<tr>
<td>9</td>
<td>.145</td>
<td>.021</td>
<td>7.043</td>
<td>16</td>
<td>.972</td>
</tr>
<tr>
<td>10</td>
<td>.079</td>
<td>.006</td>
<td>1.594</td>
<td>7</td>
<td>.979</td>
</tr>
</tbody>
</table>

* significant at the .001 level

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 33 presents the first function weights associated with the personality (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 33 reveal that Factors H, F,
Q3, and G are the primary dimensions composing the personality set, and that Habits 13 and 10 are the primary variables involved in the health-habit set of the first significant function.

**TABLE 33**

FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 3

<table>
<thead>
<tr>
<th>Personality Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.180</td>
<td>6</td>
<td>-.020</td>
</tr>
<tr>
<td>B</td>
<td>.117</td>
<td>7</td>
<td>.019</td>
</tr>
<tr>
<td>C</td>
<td>.130</td>
<td>8</td>
<td>.245</td>
</tr>
<tr>
<td>E</td>
<td>.322</td>
<td>9</td>
<td>-.062</td>
</tr>
<tr>
<td>F</td>
<td>.935</td>
<td>10</td>
<td>-.430</td>
</tr>
<tr>
<td>G</td>
<td>-.549</td>
<td>11</td>
<td>.133</td>
</tr>
<tr>
<td>H</td>
<td>-.941</td>
<td>12</td>
<td>-.156</td>
</tr>
<tr>
<td>I</td>
<td>-.144</td>
<td>13</td>
<td>-.590</td>
</tr>
<tr>
<td>L</td>
<td>.466</td>
<td>14</td>
<td>.123</td>
</tr>
<tr>
<td>M</td>
<td>.273</td>
<td>15</td>
<td>.010</td>
</tr>
<tr>
<td>N</td>
<td>.137</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>-.229</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>.225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>-.091</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>-.737</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>-.175</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This canonical function indicates that those Seventh-day Adventists who score lower on Factor H (tending to be more shy as opposed to being venturesome), higher on Factor F (tending to be more happy-go-lucky as opposed to being sober), lower on Factor Q3 (tending to be more undisciplined as opposed to being controlled), and lower on Factor G (tending to be more expedient as opposed to...
being more conscientious) tend not to follow S.D.A. health teaching
with regard to spiritual nurture and refined-food intake.

**Hypothesis 4.** There is no significant canonical correlation
between a linear combination of personality variables A, B, C, E, F,
G, H, I, L, M, N, O, Q1, Q2, Q3, Q4 on the one hand and a linear
combination of health-habit variables 1, 2, 3, 4, 5, 16, 17, 18,
19, 20 on the other.

Table 34 presents the canonical correlation coefficient for
each set of equations, the proportion of variance shared by the two
composites, and the significance tests for the ten significant
functions of hypothesis 4. All numbers have been rounded to three
decimal places.

The data in table 34 indicate that there is one canonical
correlation significant at the .05 level, in fact significant at the
.031 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 4, these findings indicate that
personality, as composed by the combination of sixteen dimensions,
is significantly related to the health habits selected, and that the
proportion of variance shared by the set of equations significantly
related is 19.4 percent.

Canonical correlation analysis also yields the weights
associated with each of the variables constituting the pair of
equations for each function.

Table 35 presents the first function weights associated with
the personality (set one) variables on the one hand and with the
health-habit (set two) variables on the other. All numbers have
been rounded to three decimal places.
### TABLE 34

**CANONICAL CORRELATION OF HYPOTHESIS 4**

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.440*</td>
<td>0.194</td>
<td>194.667</td>
<td>160</td>
<td>0.031</td>
</tr>
<tr>
<td>2</td>
<td>0.386</td>
<td>0.149</td>
<td>139.534</td>
<td>135</td>
<td>0.381</td>
</tr>
<tr>
<td>3</td>
<td>0.319</td>
<td>0.102</td>
<td>98.131</td>
<td>112</td>
<td>0.822</td>
</tr>
<tr>
<td>4</td>
<td>0.292</td>
<td>0.985</td>
<td>70.560</td>
<td>91</td>
<td>0.942</td>
</tr>
<tr>
<td>5</td>
<td>0.246</td>
<td>0.061</td>
<td>47.758</td>
<td>72</td>
<td>0.986</td>
</tr>
<tr>
<td>6</td>
<td>0.219</td>
<td>0.048</td>
<td>31.772</td>
<td>55</td>
<td>0.993</td>
</tr>
<tr>
<td>7</td>
<td>0.170</td>
<td>0.029</td>
<td>19.181</td>
<td>40</td>
<td>0.998</td>
</tr>
<tr>
<td>8</td>
<td>0.139</td>
<td>0.019</td>
<td>11.701</td>
<td>27</td>
<td>0.995</td>
</tr>
<tr>
<td>9</td>
<td>0.125</td>
<td>0.016</td>
<td>6.695</td>
<td>16</td>
<td>0.979</td>
</tr>
<tr>
<td>10</td>
<td>0.102</td>
<td>0.010</td>
<td>2.660</td>
<td>7</td>
<td>0.915</td>
</tr>
</tbody>
</table>

* significant at the .031 level

The weights presented in table 35 reveal that Factors F and H are the primary dimensions composing the personality set, and that Habit 3 is the primary variable involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on Factor F (tending to be more sober as opposed to being happy-go-lucky) and higher on Factor H (tending to be more venturesome as opposed to being shy) tend to follow S.D.A. health teaching with regard to caffeine ingestion.

**Hypothesis 5.** There is no significant canonical correlation...
between a linear combination of motivation variables $U:Ca$, $U:Ho$, $U:Fr$, $U:Na$, $U:SE$, $U:SS$, $U:Ma$, $U:Pg$, $U:As$, $U:Sw$ on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 on the other.

### TABLE 35

FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 4

<table>
<thead>
<tr>
<th>Personality Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-.040</td>
<td>1</td>
<td>.228</td>
</tr>
<tr>
<td>B</td>
<td>.099</td>
<td>2</td>
<td>.079</td>
</tr>
<tr>
<td>C</td>
<td>.624</td>
<td>3</td>
<td>.755</td>
</tr>
<tr>
<td>E</td>
<td>-.043</td>
<td>4</td>
<td>.128</td>
</tr>
<tr>
<td>F</td>
<td>-1.458</td>
<td>5</td>
<td>-.126</td>
</tr>
<tr>
<td>G</td>
<td>.432</td>
<td>16</td>
<td>-.013</td>
</tr>
<tr>
<td>H</td>
<td>.736</td>
<td>17</td>
<td>.060</td>
</tr>
<tr>
<td>I</td>
<td>-.252</td>
<td>18</td>
<td>.149</td>
</tr>
<tr>
<td>L</td>
<td>-.237</td>
<td>19</td>
<td>-.206</td>
</tr>
<tr>
<td>M</td>
<td>-.171</td>
<td>20</td>
<td>.001</td>
</tr>
<tr>
<td>N</td>
<td>.419</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>-.483</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>.248</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>.268</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 36 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 5. All numbers have been rounded to three decimal places.
TABLE 36
CANONICAL CORRELATION OF HYPOTHESIS 5

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.358</td>
<td>.128</td>
<td>117.294</td>
<td>100</td>
<td>.113</td>
</tr>
<tr>
<td>2</td>
<td>.304</td>
<td>.092</td>
<td>81.700</td>
<td>81</td>
<td>.463</td>
</tr>
<tr>
<td>3</td>
<td>.283</td>
<td>.080</td>
<td>56.563</td>
<td>64</td>
<td>.737</td>
</tr>
<tr>
<td>4</td>
<td>.226</td>
<td>.051</td>
<td>34.961</td>
<td>49</td>
<td>.932</td>
</tr>
<tr>
<td>5</td>
<td>.174</td>
<td>.030</td>
<td>21.346</td>
<td>36</td>
<td>.975</td>
</tr>
<tr>
<td>6</td>
<td>.149</td>
<td>.022</td>
<td>13.345</td>
<td>25</td>
<td>.972</td>
</tr>
<tr>
<td>7</td>
<td>.138</td>
<td>.019</td>
<td>7.489</td>
<td>16</td>
<td>.963</td>
</tr>
<tr>
<td>8</td>
<td>.075</td>
<td>.006</td>
<td>2.523</td>
<td>9</td>
<td>.980</td>
</tr>
<tr>
<td>9</td>
<td>.061</td>
<td>.004</td>
<td>1.044</td>
<td>4</td>
<td>.903</td>
</tr>
<tr>
<td>10</td>
<td>.012</td>
<td>.000</td>
<td>.064</td>
<td>1</td>
<td>.800</td>
</tr>
</tbody>
</table>

The data in Table 36 indicate that there are no canonical correlations significant at the .05 level. The null hypothesis, therefore, is retained.

With respect to Hypothesis 5, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.

Hypothesis 6. There is no significant canonical correlation between a linear combination of motivation variables U:Ca, U:Ho, U:Fr, U:Na, U:SE, U:SS, U:Ma, U:Pg, U:As, U:Sw on the one hand and a linear combination of health-habit variables 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 on the other.
Table 37 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 6. All numbers have been rounded to three decimal places.

The data in Table 37 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .011 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 6, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.455*</td>
<td>.207</td>
<td>134.481</td>
<td>100</td>
<td>.011</td>
</tr>
<tr>
<td>2</td>
<td>.306</td>
<td>.094</td>
<td>74.240</td>
<td>81</td>
<td>.693</td>
</tr>
<tr>
<td>3</td>
<td>.249</td>
<td>.062</td>
<td>48.787</td>
<td>64</td>
<td>.918</td>
</tr>
<tr>
<td>4</td>
<td>.219</td>
<td>.048</td>
<td>32.120</td>
<td>40</td>
<td>.967</td>
</tr>
<tr>
<td>5</td>
<td>.188</td>
<td>.035</td>
<td>19.382</td>
<td>36</td>
<td>.989</td>
</tr>
<tr>
<td>6</td>
<td>.170</td>
<td>.029</td>
<td>10.049</td>
<td>25</td>
<td>.997</td>
</tr>
<tr>
<td>7</td>
<td>.074</td>
<td>.005</td>
<td>2.436</td>
<td>16</td>
<td>1.000</td>
</tr>
<tr>
<td>8</td>
<td>.050</td>
<td>.003</td>
<td>1.022</td>
<td>9</td>
<td>.999</td>
</tr>
<tr>
<td>9</td>
<td>.038</td>
<td>.001</td>
<td>.387</td>
<td>4</td>
<td>.984</td>
</tr>
<tr>
<td>10</td>
<td>.005</td>
<td>.000</td>
<td>.006</td>
<td>1</td>
<td>.936</td>
</tr>
</tbody>
</table>

* significant at the .011 level
proportion of variance shared by the set of equations significantly related is 20.7 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 38 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in Table 38 reveal that Dynamic Structures $U:SE$, $U:Fr$, $U:Ho$, $U:Ma$, and $U:Na$ are the primary dimensions

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>$U:Ca$</td>
<td>.045</td>
<td>11</td>
<td>.131</td>
</tr>
<tr>
<td>$U:Ho$</td>
<td>-.436</td>
<td>12</td>
<td>-.124</td>
</tr>
<tr>
<td>$U:Fr$</td>
<td>-.659</td>
<td>13</td>
<td>-.658</td>
</tr>
<tr>
<td>$U:Na$</td>
<td>.402</td>
<td>14</td>
<td>-.016</td>
</tr>
<tr>
<td>$U:SE$</td>
<td>-.781</td>
<td>15</td>
<td>-.074</td>
</tr>
<tr>
<td>$U:SS$</td>
<td>-.127</td>
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<td>-.276</td>
</tr>
<tr>
<td>$U:Ma$</td>
<td>.427</td>
<td>17</td>
<td>-.141</td>
</tr>
<tr>
<td>$U:Pg$</td>
<td>.272</td>
<td>18</td>
<td>-.008</td>
</tr>
<tr>
<td>$U:As$</td>
<td>.271</td>
<td>19</td>
<td>.164</td>
</tr>
<tr>
<td>$U:Sw$</td>
<td>.399</td>
<td>20</td>
<td>.174</td>
</tr>
</tbody>
</table>
composing the motivation set, and that Habit 13 is the primary variable involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on U:SE (tending to have lower need levels with respect to Superego Sentiment), lower on U:Fr (Tending to have lower need levels with respect to the Fear Erg), lower on U:Ho (tending to have lower need levels with respect to the Home-parental Sentiment), higher on U:Ma (tending to have higher need levels with respect to the Mating Erg), and higher on U:Na (tending to have higher need levels with respect to the Narcism-comfort Erg) tend not to follow S.D.A. health teaching regarding spiritual nurture.

**Hypothesis 7.** There is no significant canonical correlation between a linear combination of motivation variables U:Ca, U:Ho, U:Fr, U:Na, U:SE, U:SS, U:Ma, U:Pg, U:As, U:Sw on the one hand and a linear combination of health-habit variables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 on the other.

Table 39 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 7. All numbers have been rounded to three decimal places.

The data in table 39 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .003 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 7, these findings indicate that motivation, as composed by the combination of ten dimensions, is
TABLE 39
CANONICAL CORRELATION OF HYPOTHESIS 7

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.449*</td>
<td>.202</td>
<td>141.826</td>
<td>100</td>
<td>.003</td>
</tr>
<tr>
<td>2</td>
<td>.382</td>
<td>.146</td>
<td>83.441</td>
<td>81</td>
<td>.409</td>
</tr>
<tr>
<td>3</td>
<td>.276</td>
<td>.076</td>
<td>55.612</td>
<td>64</td>
<td>.765</td>
</tr>
<tr>
<td>4</td>
<td>.247</td>
<td>.061</td>
<td>35.078</td>
<td>49</td>
<td>.930</td>
</tr>
<tr>
<td>5</td>
<td>.163</td>
<td>.027</td>
<td>18.760</td>
<td>36</td>
<td>.992</td>
</tr>
<tr>
<td>6</td>
<td>.137</td>
<td>.019</td>
<td>11.791</td>
<td>25</td>
<td>.988</td>
</tr>
<tr>
<td>7</td>
<td>.116</td>
<td>.014</td>
<td>6.887</td>
<td>16</td>
<td>.975</td>
</tr>
<tr>
<td>8</td>
<td>.097</td>
<td>.009</td>
<td>3.396</td>
<td>9</td>
<td>.947</td>
</tr>
<tr>
<td>9</td>
<td>.053</td>
<td>.003</td>
<td>.923</td>
<td>4</td>
<td>.921</td>
</tr>
<tr>
<td>10</td>
<td>.028</td>
<td>.001</td>
<td>.203</td>
<td>1</td>
<td>.652</td>
</tr>
</tbody>
</table>

* significant at the .003 level

significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 20.2 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 40 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.
TABLE 40
FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 7

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>U:Ca</td>
<td>-.052</td>
<td>6</td>
<td>.275</td>
</tr>
<tr>
<td>U:Ho</td>
<td>.028</td>
<td>7</td>
<td>.128</td>
</tr>
<tr>
<td>U:Fr</td>
<td>-.635</td>
<td>8</td>
<td>.223</td>
</tr>
<tr>
<td>U:Na</td>
<td>.174</td>
<td>9</td>
<td>-.018</td>
</tr>
<tr>
<td>U:SE</td>
<td>-.735</td>
<td>10</td>
<td>.013</td>
</tr>
<tr>
<td>U:SS</td>
<td>-.319</td>
<td>11</td>
<td>.082</td>
</tr>
<tr>
<td>U:Ma</td>
<td>.324</td>
<td>12</td>
<td>-.161</td>
</tr>
<tr>
<td>U:Pg</td>
<td>.432</td>
<td>13</td>
<td>-.755</td>
</tr>
<tr>
<td>U:As</td>
<td>.352</td>
<td>14</td>
<td>-.188</td>
</tr>
<tr>
<td>U:Sw</td>
<td>.804</td>
<td>15</td>
<td>-.041</td>
</tr>
</tbody>
</table>

The weights presented in table 40 reveal that Dynamic Structures U:Sw, U:SE, U:Fr, and U:Pg are the primary dimensions composing the motivation set, and that Habit 13 is the primary variable involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score higher on U:Sw (tending to have higher need levels with respect to the Sweetheart-spouse Sentiment), lower on U:SE (tending to have lower need levels with respect to the Superego Sentiment), lower on U:Fr (tending to have lower need levels with respect to the Fear Erg), and higher on U:Pg (tending to have higher need levels with respect to the Pugnacity-sadism Erg) tend not to follow S.D.A. health teaching regarding spiritual nurture.
Hypothesis 8. There is no significant canonical correlation between a linear combination of motivation variables U:Ca, U:Ho, U:Fr, U:Na, U:SE, U:SS, U:Ma, U:Pg, U:As, U:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 16, 17, 18, 19, 20 on the other.

Table 41 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 8. All numbers have been rounded to three decimal places.

The data in table 41 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .039 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 8, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 14.7 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 42 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 42 reveal that Dynamic Structures U:SE, U:Pg, U:Na, and U:Ho are the primary dimensions
TABLE 41
CANONICAL CORRELATION OF HYPOTHESIS 8

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.383*</td>
<td>.147</td>
<td>125.901</td>
<td>100</td>
<td>.039</td>
</tr>
<tr>
<td>2</td>
<td>.326</td>
<td>.106</td>
<td>84.657</td>
<td>81</td>
<td>.373</td>
</tr>
<tr>
<td>3</td>
<td>.251</td>
<td>.063</td>
<td>55.555</td>
<td>64</td>
<td>.767</td>
</tr>
<tr>
<td>4</td>
<td>.236</td>
<td>.056</td>
<td>38.682</td>
<td>49</td>
<td>.854</td>
</tr>
<tr>
<td>5</td>
<td>.206</td>
<td>.042</td>
<td>23.802</td>
<td>36</td>
<td>.941</td>
</tr>
<tr>
<td>6</td>
<td>.168</td>
<td>.028</td>
<td>12.593</td>
<td>25</td>
<td>.981</td>
</tr>
<tr>
<td>7</td>
<td>.106</td>
<td>.011</td>
<td>5.183</td>
<td>16</td>
<td>.995</td>
</tr>
<tr>
<td>8</td>
<td>.078</td>
<td>.006</td>
<td>2.230</td>
<td>9</td>
<td>.987</td>
</tr>
<tr>
<td>9</td>
<td>.042</td>
<td>.002</td>
<td>.639</td>
<td>4</td>
<td>.959</td>
</tr>
<tr>
<td>10</td>
<td>.026</td>
<td>.001</td>
<td>.172</td>
<td>1</td>
<td>.678</td>
</tr>
</tbody>
</table>

* significant at the .039 level

composing the motivation set, and that Habit 3 is the primary variable involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on U:SE (tending to have lower need levels with respect to the Superego Sentiment), higher on U:Pg (tending to have higher need levels with respect to the Pugnacity-sadism Erg), higher on U:Na (tending to have higher need levels with respect to the Narcism-comfort Erg), and lower on U:Ho (tending to have lower need levels with respect to the Home-
TABLE 42
FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 8

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>U:Ca</td>
<td>.009</td>
<td>1</td>
<td>.083</td>
</tr>
<tr>
<td>U:Ho</td>
<td>-.483</td>
<td>2</td>
<td>-.192</td>
</tr>
<tr>
<td>U:Fr</td>
<td>-.005</td>
<td>3</td>
<td>-.642</td>
</tr>
<tr>
<td>U:Na</td>
<td>.556</td>
<td>4</td>
<td>-.251</td>
</tr>
<tr>
<td>U:SE</td>
<td>-.937</td>
<td>5</td>
<td>-.073</td>
</tr>
<tr>
<td>U:SS</td>
<td>-.076</td>
<td>16</td>
<td>-.210</td>
</tr>
<tr>
<td>U:Ma</td>
<td>.333</td>
<td>17</td>
<td>-.180</td>
</tr>
<tr>
<td>U:Pg</td>
<td>.604</td>
<td>18</td>
<td>-.154</td>
</tr>
<tr>
<td>U:As</td>
<td>-.083</td>
<td>19</td>
<td>.263</td>
</tr>
<tr>
<td>U:Sw</td>
<td>.197</td>
<td>20</td>
<td>.170</td>
</tr>
</tbody>
</table>

Parental Sentiment) tend not to follow S.D.A. health teaching regarding caffeine ingestion.

Hypothesis 9. There is no significant canonical correlation between a linear combination of motivation variables I:Ca, I:Ho, I:Fr, I:Na, I:SE, I:SS, I:Ma, I:Pg, I:As, I:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 on the other.

Table 43 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 9. All numbers have been rounded to three decimal places.
TABLE 43

CANONICAL CORRELATION OF HYPOTHESIS 9

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.362</td>
<td>.131</td>
<td>112.230</td>
<td>100</td>
<td>.191</td>
</tr>
<tr>
<td>2</td>
<td>.332</td>
<td>.110</td>
<td>75.746</td>
<td>81</td>
<td>.648</td>
</tr>
<tr>
<td>3</td>
<td>.228</td>
<td>.052</td>
<td>45.455</td>
<td>64</td>
<td>.959</td>
</tr>
<tr>
<td>4</td>
<td>.223</td>
<td>.050</td>
<td>31.661</td>
<td>49</td>
<td>.971</td>
</tr>
<tr>
<td>5</td>
<td>.164</td>
<td>.027</td>
<td>18.421</td>
<td>36</td>
<td>.993</td>
</tr>
<tr>
<td>6</td>
<td>.150</td>
<td>.023</td>
<td>11.391</td>
<td>25</td>
<td>.991</td>
</tr>
<tr>
<td>7</td>
<td>.108</td>
<td>.012</td>
<td>5.513</td>
<td>16</td>
<td>.993</td>
</tr>
<tr>
<td>8</td>
<td>.074</td>
<td>.006</td>
<td>2.459</td>
<td>9</td>
<td>.982</td>
</tr>
<tr>
<td>9</td>
<td>.058</td>
<td>.003</td>
<td>1.050</td>
<td>4</td>
<td>.902</td>
</tr>
<tr>
<td>10</td>
<td>.026</td>
<td>.001</td>
<td>.179</td>
<td>1</td>
<td>.672</td>
</tr>
</tbody>
</table>

The data in table 43 indicate that there are no canonical correlations significant at the .05 level. The null hypothesis, therefore, is retained.

With respect to hypothesis 9, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.

**Hypothesis 10.** There is no significant canonical correlation between a linear combination of motivation variables I:Ca, I:Ho, I:Fr, I:Na, I:SE, I:SS, I:Ma, I:Pg, I:As, I:Sw on the one hand and a linear combination of health-habit variables, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 on the other.
Table 44 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 10. All numbers have been rounded to three decimal places.

The data in table 44 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .022 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 10, these findings indicate that motivation, as composed by the combination of ten dimensions, is

TABLE 44
CANONICAL CORRELATION OF HYPOTHESIS 10

<table>
<thead>
<tr>
<th></th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.457*</td>
<td>0.209</td>
<td>130.019</td>
<td>100</td>
<td>0.022</td>
</tr>
<tr>
<td>2</td>
<td>0.278</td>
<td>0.077</td>
<td>69.218</td>
<td>81</td>
<td>0.822</td>
</tr>
<tr>
<td>3</td>
<td>0.269</td>
<td>0.972</td>
<td>48.405</td>
<td>64</td>
<td>0.924</td>
</tr>
<tr>
<td>4</td>
<td>0.201</td>
<td>0.040</td>
<td>28.853</td>
<td>49</td>
<td>0.988</td>
</tr>
<tr>
<td>5</td>
<td>0.165</td>
<td>0.027</td>
<td>18.137</td>
<td>36</td>
<td>0.994</td>
</tr>
<tr>
<td>6</td>
<td>0.158</td>
<td>0.025</td>
<td>10.952</td>
<td>25</td>
<td>0.993</td>
</tr>
<tr>
<td>7</td>
<td>0.109</td>
<td>0.012</td>
<td>4.360</td>
<td>16</td>
<td>0.998</td>
</tr>
<tr>
<td>8</td>
<td>0.063</td>
<td>0.004</td>
<td>1.250</td>
<td>9</td>
<td>0.999</td>
</tr>
<tr>
<td>9</td>
<td>0.026</td>
<td>0.001</td>
<td>0.207</td>
<td>4</td>
<td>0.995</td>
</tr>
<tr>
<td>10</td>
<td>0.010</td>
<td>0.000</td>
<td>0.028</td>
<td>1</td>
<td>0.868</td>
</tr>
</tbody>
</table>

* significant at the .022 level
significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 20.9 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 45 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 45 reveal that Dynamic Structures I:Pg, I:Sw, I:Ho, and I:Ma are the primary dimensions

**TABLE 45**

FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 10

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>I:Ca</td>
<td>-.022</td>
<td>11</td>
<td>-.315</td>
</tr>
<tr>
<td>I:Ho</td>
<td>-.753</td>
<td>12</td>
<td>-.077</td>
</tr>
<tr>
<td>I:Fr</td>
<td>.047</td>
<td>13</td>
<td>-.467</td>
</tr>
<tr>
<td>I:Na</td>
<td>.377</td>
<td>14</td>
<td>.180</td>
</tr>
<tr>
<td>I:SE</td>
<td>-.453</td>
<td>15</td>
<td>-.413</td>
</tr>
<tr>
<td>I:SS</td>
<td>-.314</td>
<td>16</td>
<td>.149</td>
</tr>
<tr>
<td>I:Ma</td>
<td>.647</td>
<td>17</td>
<td>-.054</td>
</tr>
<tr>
<td>I:Pg</td>
<td>1.183</td>
<td>18</td>
<td>-.065</td>
</tr>
<tr>
<td>I:As</td>
<td>-.053</td>
<td>19</td>
<td>.021</td>
</tr>
<tr>
<td>I:Sw</td>
<td>.762</td>
<td>20</td>
<td>.166</td>
</tr>
</tbody>
</table>
composing the motivation set, and that Habits 13, 15, and 11 are the primary variables involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score higher on I:Pg (tending to have higher satisfaction levels with respect to the Pugnacity-sadism Erg), higher on I:Sw (tending to have higher satisfaction levels with respect to the Sweetheart-spouse Sentiment), lower in I:Ho (tending to have lower satisfaction levels with respect to the Home-parental Sentiment, and higher on I:Ma (tending to have higher satisfaction levels with respect to the Mating Erg) tend not to follow S.D.A. health teaching regarding spiritual nurture, supper intake, and sleep regularity.

**Hypothesis 11.** There is no significant canonical correlation between a linear combination of motivation variables I:Ca, I:Ho, I:Fr, I:Na, I:SE, I:SS, I:Ma, I:Pg, I:As, I:Sw on the one hand and a linear combination of health-habit variables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 on the other.

Table 46 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 11. All numbers have been rounded to three decimal places.

The data in table 46 indicate that there is one canonical correlation significant at the .05 level, in fact significant beyond the .001 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 11, these findings indicate that
TABLE 46
CANONICAL CORRELATION OF HYPOTHESIS 11

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.478*</td>
<td>.229</td>
<td>167.147</td>
<td>100</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2</td>
<td>.325</td>
<td>.106</td>
<td>99.839</td>
<td>81</td>
<td>.075</td>
</tr>
<tr>
<td>3</td>
<td>.296</td>
<td>.088</td>
<td>70.789</td>
<td>64</td>
<td>.265</td>
</tr>
<tr>
<td>4</td>
<td>.235</td>
<td>.055</td>
<td>46.946</td>
<td>49</td>
<td>.563</td>
</tr>
<tr>
<td>5</td>
<td>.224</td>
<td>.050</td>
<td>32.268</td>
<td>36</td>
<td>.647</td>
</tr>
<tr>
<td>6</td>
<td>.187</td>
<td>.035</td>
<td>18.866</td>
<td>25</td>
<td>.804</td>
</tr>
<tr>
<td>7</td>
<td>.156</td>
<td>.024</td>
<td>9.626</td>
<td>16</td>
<td>.885</td>
</tr>
<tr>
<td>8</td>
<td>.103</td>
<td>.011</td>
<td>3.213</td>
<td>9</td>
<td>.955</td>
</tr>
<tr>
<td>9</td>
<td>.041</td>
<td>.002</td>
<td>.468</td>
<td>4</td>
<td>.977</td>
</tr>
<tr>
<td>10</td>
<td>.010</td>
<td>.000</td>
<td>.024</td>
<td>1</td>
<td>.878</td>
</tr>
</tbody>
</table>

* significant at the .001 level

motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 22.9 percent.

Canonical correlation also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 47 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.
TABLE 47

FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 11

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>I:Ca</td>
<td>.105</td>
<td>6</td>
<td>.116</td>
</tr>
<tr>
<td>I:Ho</td>
<td>.821</td>
<td>7</td>
<td>-.039</td>
</tr>
<tr>
<td>I:Fr</td>
<td>-.101</td>
<td>8</td>
<td>-.296</td>
</tr>
<tr>
<td>I:Na</td>
<td>-.560</td>
<td>9</td>
<td>-.139</td>
</tr>
<tr>
<td>I:SE</td>
<td>.330</td>
<td>10</td>
<td>.255</td>
</tr>
<tr>
<td>I:SS</td>
<td>.301</td>
<td>11</td>
<td>.268</td>
</tr>
<tr>
<td>I:Ma</td>
<td>-.777</td>
<td>12</td>
<td>-.052</td>
</tr>
<tr>
<td>I:Pg</td>
<td>-.965</td>
<td>13</td>
<td>.445</td>
</tr>
<tr>
<td>I:As</td>
<td>.075</td>
<td>14</td>
<td>-.194</td>
</tr>
<tr>
<td>I:Sw</td>
<td>-.755</td>
<td>15</td>
<td>.376</td>
</tr>
</tbody>
</table>

The weights presented in table 47 reveal that Dynamic Structures I:Pg, I:Ho, I:Ma, I:Sw, and I:Na are the primary dimensions composing the motivation set, and that Habits 13, 15, 8, 11, and 10 are the primary variables involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on I:Pg (tending to have lower satisfaction levels with respect to the Pugnacity-sadism Erg), higher on I:Ho (tending to have higher satisfaction levels with respect to the Home-parental Sentiment), lower on I:Ma (tending to have lower satisfaction levels with respect to the Mating Erg), lower on I:Sw (tending to have lower satisfaction levels with respect...
to the Sweeheart-spouse Sentiment), and lower on I:Na (tending to have lower satisfaction levels with respect to the Narcism-comfort Erg) tend to follow S.D.A. health teaching regarding spiritual nurture and supper intake, tend not to follow S.D.A. health teaching regarding leisure activity, and tend to follow S.D.A. health teaching regarding sleep regularity and refined-food intake.

**Hypothesis 12.** There is no significant canonical correlation between a linear combination of motivation variables I:Ca, I:Ho, I:Fr, I:Na, I:SE, I:SS, I:Ma, I:Pg, I:As, I:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 16, 17, 18, 19, 20 on the other.

Table 48 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 12. All numbers have been rounded to three decimal places.

The data in table 48 indicate that there are no canonical correlations significant at the .05 level. The null hypothesis, therefore, is retained.

With respect to hypothesis 12, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.

**Hypothesis 13.** There is no significant canonical correlation between a linear combination of motivation variables T:Ca, T:Ho, T:Fr, T:Na, T:SE, T:SS, T:Ma, T:Pg, T:As, T:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 on the other.
Table 49 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 13. All numbers have been rounded to three decimal places.

The data in table 49 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .028 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 13, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.338</td>
<td>.114</td>
<td>85.720</td>
<td>100</td>
<td>.845</td>
</tr>
<tr>
<td>2</td>
<td>.256</td>
<td>.066</td>
<td>54.314</td>
<td>81</td>
<td>.988</td>
</tr>
<tr>
<td>3</td>
<td>.211</td>
<td>.046</td>
<td>36.728</td>
<td>64</td>
<td>.997</td>
</tr>
<tr>
<td>4</td>
<td>.194</td>
<td>.038</td>
<td>24.952</td>
<td>49</td>
<td>.997</td>
</tr>
<tr>
<td>5</td>
<td>.152</td>
<td>.023</td>
<td>15.032</td>
<td>36</td>
<td>.999</td>
</tr>
<tr>
<td>6</td>
<td>.131</td>
<td>.017</td>
<td>8.933</td>
<td>25</td>
<td>.999</td>
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<tr>
<td>7</td>
<td>.101</td>
<td>.010</td>
<td>4.453</td>
<td>16</td>
<td>.998</td>
</tr>
<tr>
<td>8</td>
<td>.068</td>
<td>.005</td>
<td>1.816</td>
<td>9</td>
<td>.994</td>
</tr>
<tr>
<td>9</td>
<td>.039</td>
<td>.002</td>
<td>.599</td>
<td>4</td>
<td>.963</td>
</tr>
<tr>
<td>10</td>
<td>.029</td>
<td>.001</td>
<td>.214</td>
<td>1</td>
<td>.644</td>
</tr>
</tbody>
</table>
### TABLE 49

**CANONICAL CORRELATION OF HYPOTHESIS 13**

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.390*</td>
<td>.152</td>
<td>128.351</td>
<td>100</td>
<td>.028</td>
</tr>
<tr>
<td>2</td>
<td>.335</td>
<td>.112</td>
<td>85.450</td>
<td>81</td>
<td>.350</td>
</tr>
<tr>
<td>3</td>
<td>.278</td>
<td>.077</td>
<td>54.559</td>
<td>64</td>
<td>.795</td>
</tr>
<tr>
<td>4</td>
<td>.205</td>
<td>.042</td>
<td>33.681</td>
<td>49</td>
<td>.950</td>
</tr>
<tr>
<td>5</td>
<td>.189</td>
<td>.035</td>
<td>22.543</td>
<td>36</td>
<td>.961</td>
</tr>
<tr>
<td>6</td>
<td>.149</td>
<td>.022</td>
<td>13.135</td>
<td>25</td>
<td>.975</td>
</tr>
<tr>
<td>7</td>
<td>.134</td>
<td>.018</td>
<td>7.328</td>
<td>16</td>
<td>.966</td>
</tr>
<tr>
<td>8</td>
<td>.080</td>
<td>.006</td>
<td>2.637</td>
<td>9</td>
<td>.977</td>
</tr>
<tr>
<td>9</td>
<td>.052</td>
<td>.003</td>
<td>.982</td>
<td>4</td>
<td>.913</td>
</tr>
<tr>
<td>10</td>
<td>.033</td>
<td>.001</td>
<td>.285</td>
<td>1</td>
<td>.594</td>
</tr>
</tbody>
</table>

* significant at the .028 level

The proportion of variance shared by the set of equations significantly related is 15.2 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 50 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 50 reveal that Dynamic
Structures T:Na and T:Pg are the primary dimensions composing the motivation set, and that Habits 3 and 4 are the primary variables involved in the health-habit set of the first significant function.

**TABLE 50**
FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 13

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:Ca</td>
<td>.391</td>
<td>1</td>
<td>.008</td>
</tr>
<tr>
<td>T:Ho</td>
<td>.549</td>
<td>2</td>
<td>.183</td>
</tr>
<tr>
<td>T:Fr</td>
<td>-.189</td>
<td>3</td>
<td>.626</td>
</tr>
<tr>
<td>T:Na</td>
<td>-1.683</td>
<td>4</td>
<td>.368</td>
</tr>
<tr>
<td>T:S5</td>
<td>-.026</td>
<td>5</td>
<td>.010</td>
</tr>
<tr>
<td>T:SS</td>
<td>.078</td>
<td>6</td>
<td>.017</td>
</tr>
<tr>
<td>T:Ma</td>
<td>-.766</td>
<td>7</td>
<td>.142</td>
</tr>
<tr>
<td>T:Pg</td>
<td>-.908</td>
<td>8</td>
<td>-.148</td>
</tr>
<tr>
<td>T:As</td>
<td>.472</td>
<td>9</td>
<td>-.143</td>
</tr>
<tr>
<td>T:Sw</td>
<td>-.348</td>
<td>10</td>
<td>.119</td>
</tr>
</tbody>
</table>

This canonical function indicates that those Seventh-day Adventists who score lower on T:Na (tending to have lower total energy investment with respect to the Narcism-comfort Erg) and lower on T:Pg (tending to have lower total energy investment with respect to the Pugnacity-sadism Erg) tend to follow S.D.A. health teaching regarding caffeine ingestion and cheese selection.

**Hypothesis 14.** There is no significant canonical correlation between a linear combination of motivation variables T:Ca, T:Ho, T:Fr,
T:Na, T:SE, T:SS, T:Ma, T:Pg, T:As, T:Sw on the one hand and a linear
combination of health-habit variables 11, 12, 13, 14, 15, 16, 17, 18,
19, 20 on the other.

Table 51 presents the canonical correlation coefficient for
each set of equations, the proportion of variance shared by the two
composites, and the significance tests for the ten significant
functions of hypothesis 14. All numbers have been rounded to three
decimal places.

The data in table 51 indicate that there is one canonical
correlation significant at the .05 level, in fact significant be-
yond the .001 level. The null hypothesis, therefore, is rejected.

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.487*</td>
<td>.237</td>
<td>165.010</td>
<td>100</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2</td>
<td>.362</td>
<td>.131</td>
<td>94.623</td>
<td>81</td>
<td>.143</td>
</tr>
<tr>
<td>3</td>
<td>.279</td>
<td>.078</td>
<td>58.198</td>
<td>64</td>
<td>.685</td>
</tr>
<tr>
<td>4</td>
<td>.214</td>
<td>.046</td>
<td>37.162</td>
<td>49</td>
<td>.890</td>
</tr>
<tr>
<td>5</td>
<td>.202</td>
<td>.041</td>
<td>24.973</td>
<td>36</td>
<td>.917</td>
</tr>
<tr>
<td>7</td>
<td>.145</td>
<td>.021</td>
<td>6.221</td>
<td>16</td>
<td>.986</td>
</tr>
<tr>
<td>8</td>
<td>.051</td>
<td>.003</td>
<td>.737</td>
<td>9</td>
<td>1.000</td>
</tr>
<tr>
<td>9</td>
<td>.015</td>
<td>.000</td>
<td>.062</td>
<td>4</td>
<td>1.000</td>
</tr>
<tr>
<td>10</td>
<td>.002</td>
<td>.000</td>
<td>.001</td>
<td>1</td>
<td>.978</td>
</tr>
</tbody>
</table>

* significant at the .001 level
With respect to hypothesis 14, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the set of equations significantly related is 23.7 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 52 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in Table 52 reveal that Dynamic Structures T:Na, T:SE, T:Pg, T:Sw, and T:Ho are the primary dimensions composing the motivation set, and that Habit 13 is the primary variable involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score higher on T:Na (tending to have higher total energy investment with respect to the Narcism-comfort Erg), lower on T:SE (tending to have lower total energy investment with respect to the Superego Sentiment), higher on T:Pg (tending to have higher total energy investment with respect to the Pugnacity-sadism Erg), higher on T:Sw (tending to have higher total energy investment with respect to the Sweetheart-spouse Sentiment), and lower on T:Ho (tending to have lower total energy investment with respect to the...
Home-parental Sentiment) tend not to follow S.D.A. health teaching regarding spiritual nurture.

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:Ca</td>
<td>.099</td>
<td>11</td>
<td>-.131</td>
</tr>
<tr>
<td>T:Ho</td>
<td>-.669</td>
<td>12</td>
<td>-.145</td>
</tr>
<tr>
<td>T:Fr</td>
<td>-.135</td>
<td>13</td>
<td>-.585</td>
</tr>
<tr>
<td>T:Na</td>
<td>.947</td>
<td>14</td>
<td>.010</td>
</tr>
<tr>
<td>T:SE</td>
<td>-.788</td>
<td>15</td>
<td>-.235</td>
</tr>
<tr>
<td>T:SS</td>
<td>-.412</td>
<td>16</td>
<td>-.064</td>
</tr>
<tr>
<td>T:Ma</td>
<td>.634</td>
<td>17</td>
<td>-.132</td>
</tr>
<tr>
<td>T:Pg</td>
<td>.775</td>
<td>18</td>
<td>-.084</td>
</tr>
<tr>
<td>T:As</td>
<td>-.139</td>
<td>19</td>
<td>.150</td>
</tr>
<tr>
<td>T:Sw</td>
<td>.725</td>
<td>20</td>
<td>.053</td>
</tr>
</tbody>
</table>

Hypothesis 15. There is no significant canonical correlation between a linear combination of motivation variables T:Ca, T:Ho, T:Fr, T:Na, T:SE, T:SS, T:Ma, T:Pg, T:As, T:Sw on the one hand and a linear combination of health-habit variables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 on the other.

Table 53 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 15. All numbers have been rounded to three decimal places.
### TABLE 53

**CANONICAL CORRELATION OF HYPOTHESIS 15**

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.494*</td>
<td>.244</td>
<td>177.301</td>
<td>100</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2</td>
<td>.350**</td>
<td>.123</td>
<td>104.847</td>
<td>81</td>
<td>.037</td>
</tr>
<tr>
<td>3</td>
<td>.037</td>
<td>.094</td>
<td>70.865</td>
<td>64</td>
<td>.263</td>
</tr>
<tr>
<td>4</td>
<td>.268</td>
<td>.072</td>
<td>45.126</td>
<td>49</td>
<td>.636</td>
</tr>
<tr>
<td>5</td>
<td>.187</td>
<td>.035</td>
<td>25.722</td>
<td>36</td>
<td>.898</td>
</tr>
<tr>
<td>6</td>
<td>.179</td>
<td>.037</td>
<td>16.504</td>
<td>25</td>
<td>.899</td>
</tr>
<tr>
<td>7</td>
<td>.122</td>
<td>.015</td>
<td>8.104</td>
<td>16</td>
<td>.946</td>
</tr>
<tr>
<td>8</td>
<td>.114</td>
<td>.013</td>
<td>4.222</td>
<td>9</td>
<td>.896</td>
</tr>
<tr>
<td>9</td>
<td>.043</td>
<td>.002</td>
<td>.824</td>
<td>4</td>
<td>.935</td>
</tr>
<tr>
<td>10</td>
<td>.036</td>
<td>.001</td>
<td>.337</td>
<td>1</td>
<td>.561</td>
</tr>
</tbody>
</table>

* * significant at the .001 level  
** significant at the .037 level

The data in table 53 indicate that there are two canonical correlations significant at the .05 level, in fact one is significant beyond the .001 level while the other is significant at the .037 level. The null hypothesis, therefore, is rejected.

With respect to hypothesis 15, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the proportion of variance shared by the two sets of equations significantly related is 24.4 percent for the first and 12.3 percent for the second.
Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 54 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

TABLE 54
FIRST CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 15

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:Ca</td>
<td>.134</td>
<td>6</td>
<td>.053</td>
</tr>
<tr>
<td>T:Ho</td>
<td>-.592</td>
<td>7</td>
<td>.000</td>
</tr>
<tr>
<td>T:Fr</td>
<td>-.197</td>
<td>8</td>
<td>.342</td>
</tr>
<tr>
<td>T:Na</td>
<td>.854</td>
<td>9</td>
<td>.114</td>
</tr>
<tr>
<td>T:SE</td>
<td>-.534</td>
<td>10</td>
<td>-.124</td>
</tr>
<tr>
<td>T:SS</td>
<td>-.217</td>
<td>11</td>
<td>-.125</td>
</tr>
<tr>
<td>T:Ma</td>
<td>.750</td>
<td>12</td>
<td>-.013</td>
</tr>
<tr>
<td>T:Pg</td>
<td>.974</td>
<td>13</td>
<td>-.657</td>
</tr>
<tr>
<td>T:As</td>
<td>-.042</td>
<td>14</td>
<td>.003</td>
</tr>
<tr>
<td>T:Sw</td>
<td>.959</td>
<td>15</td>
<td>-.272</td>
</tr>
</tbody>
</table>

The weights presented in table 54 reveal that Dynamic Structures T:Pg, T:Sw, T:Na, T:Ma, and T:Ho are the primary dimensions composing the motivation set, and that Habits 13 and 8 are the primary variables involved in the health-habit set of the first significant function.
This canonical function indicates that those Seventh-day Adventists who score higher on T:Pg (tending to have higher total energy investment with respect to the Pugnacity-sadism Erg), higher on T:Sw (tending to have total energy investment with respect to the Sweetheart-spouse Sentiment), higher on T:Na (tending to have higher total energy investment with respect to the Narcism-comfort Erg), higher on T:Ma (tending to have higher total energy investment with respect to the Mating Erg), and lower on T:Ho (tending to have lower total energy investment with respect to the Home-parental Sentiment) tend not to follow S.D.A. health teaching regarding spiritual nurture and tend to follow S.D.A. health teaching regarding leisure activity.

Table 55 presents the second function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 55 reveal that Dynamic Structures T:SE, T:SS, and T:Ma are the primary dimensions composing the motivation set, and that Habits 12, 8, 7, and 11 are the primary variables involved in the health-habit set of the second significant function.

The second canonical function indicates that those Seventh-day Adventists who score lower on T:SE (tending to have lower total energy investment with respect to the Superego Sentiment), lower on T:SS (tending to have lower total energy investment with respect to the Self-sentiment), and lower on T:Ma (tending to have lower total energy investment with respect to the Mating Erg) tend not to
follow S.D.A. health teaching regarding snack ingestion and leisure activity, tend to follow S.D.A. health teaching regarding fresh-air intake, and tend not to follow S.D.A. health teaching regarding sleep regularity.

TABLE 55
SECOND CANONICAL FUNCTION WEIGHTS OF HYPOTHESIS 15

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:Ca</td>
<td>-.710</td>
<td>6</td>
<td>.107</td>
</tr>
<tr>
<td>T:Ho</td>
<td>-.085</td>
<td>7</td>
<td>.379</td>
</tr>
<tr>
<td>T:Fr</td>
<td>-.372</td>
<td>8</td>
<td>-.523</td>
</tr>
<tr>
<td>T:Na</td>
<td>-.526</td>
<td>9</td>
<td>-.248</td>
</tr>
<tr>
<td>T:SE</td>
<td>-1.787</td>
<td>10</td>
<td>-.273</td>
</tr>
<tr>
<td>T:SS</td>
<td>-1.166</td>
<td>11</td>
<td>-.296</td>
</tr>
<tr>
<td>T:Ma</td>
<td>-.912</td>
<td>12</td>
<td>-.591</td>
</tr>
<tr>
<td>T:Pg</td>
<td>-.634</td>
<td>13</td>
<td>-.151</td>
</tr>
<tr>
<td>T:As</td>
<td>-.708</td>
<td>14</td>
<td>-.172</td>
</tr>
<tr>
<td>T:Sw</td>
<td>-.598</td>
<td>15</td>
<td>.275</td>
</tr>
</tbody>
</table>

Hypothesis 16. There is no significant canonical correlation between a linear combination of motivation variables T:Ca, T:Ho, T:Fr, T:Na, T:SE, T:SS, T:Ma, T:Pg, T:As, T:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 16, 17, 18, 19, 20 on the other.

Table 56 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by
the two composites, and the significance tests for the ten significant functions of hypothesis 16. All numbers have been rounded to three decimal places.

The data in table 56 indicate that there is one canonical correlation significant at the .05 level, in fact significant at the .027 level. The null hypothesis, therefore, is rejected.

TABLE 56
CANONICAL CORRELATION OF HYPOTHESIS 16

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.438*</td>
<td>.192</td>
<td>128.635</td>
<td>100</td>
<td>.027</td>
</tr>
<tr>
<td>2</td>
<td>.294</td>
<td>.086</td>
<td>73.300</td>
<td>81</td>
<td>.719</td>
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<td>3</td>
<td>.238</td>
<td>.057</td>
<td>49.904</td>
<td>64</td>
<td>.900</td>
</tr>
<tr>
<td>4</td>
<td>.223</td>
<td>.050</td>
<td>34.733</td>
<td>49</td>
<td>.935</td>
</tr>
<tr>
<td>5</td>
<td>.182</td>
<td>.033</td>
<td>21.529</td>
<td>36</td>
<td>.973</td>
</tr>
<tr>
<td>6</td>
<td>.161</td>
<td>.026</td>
<td>12.780</td>
<td>25</td>
<td>.979</td>
</tr>
<tr>
<td>7</td>
<td>.134</td>
<td>.018</td>
<td>5.990</td>
<td>16</td>
<td>.988</td>
</tr>
<tr>
<td>8</td>
<td>.062</td>
<td>.004</td>
<td>1.283</td>
<td>9</td>
<td>.999</td>
</tr>
<tr>
<td>9</td>
<td>.033</td>
<td>.001</td>
<td>.296</td>
<td>4</td>
<td>.990</td>
</tr>
<tr>
<td>10</td>
<td>.009</td>
<td>.000</td>
<td>.020</td>
<td>1</td>
<td>.886</td>
</tr>
</tbody>
</table>

* significant at the .027 level

With respect to hypothesis 16, these findings indicate that motivation, as composed by the combination of ten dimensions, is significantly related to the health habits selected, and that the
 proportion of variance shared by the set of equations significantly related is 19.2 percent.

Canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function.

Table 57 presents the first function weights associated with the motivation (set one) variables on the one hand and with the health-habit (set two) variables on the other. All numbers have been rounded to three decimal places.

The weights presented in table 57 reveal that Dynamic Structure T:Na is the primary dimension composing the motivation set, and that Habits 3, 18, and 19 are the primary variables

<table>
<thead>
<tr>
<th>Motivation Variable</th>
<th>Weight</th>
<th>Health-Habit Variable</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T:Ca</td>
<td>.493</td>
<td>1</td>
<td>.014</td>
</tr>
<tr>
<td>T:Ho</td>
<td>.454</td>
<td>2</td>
<td>.196</td>
</tr>
<tr>
<td>T:Fr</td>
<td>-.394</td>
<td>3</td>
<td>.495</td>
</tr>
<tr>
<td>T:Na</td>
<td>-1.606</td>
<td>4</td>
<td>.215</td>
</tr>
<tr>
<td>T:SE</td>
<td>.437</td>
<td>5</td>
<td>-.082</td>
</tr>
<tr>
<td>T:SS</td>
<td>.599</td>
<td>16</td>
<td>.158</td>
</tr>
<tr>
<td>T:Ma</td>
<td>-.498</td>
<td>17</td>
<td>.019</td>
</tr>
<tr>
<td>T:Pg</td>
<td>-.517</td>
<td>18</td>
<td>.276</td>
</tr>
<tr>
<td>T:As</td>
<td>.541</td>
<td>19</td>
<td>-.254</td>
</tr>
<tr>
<td>T:Sw</td>
<td>-.565</td>
<td>20</td>
<td>.172</td>
</tr>
</tbody>
</table>

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involved in the health-habit set of the first significant function.

This canonical function indicates that those Seventh-day Adventists who score lower on T:Na (tending to have lower total energy investment with respect to the Narcissm-comfort Erg) tend to follow S.D.A. health teaching regarding caffeine ingestion and water intake and tend not to follow S.D.A. health teaching regarding weight control.

Hypothesis 17. There is no significant canonical correlation between a linear combination of motivation variables C:Ca, C:Ho, C:Fr, C:Na, C:SE, C:SS, C:Ma, C:Pg, C:As, C:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 on the other.

Table 58 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 17. All numbers have been rounded to three decimal places.

The data in table 58 indicate that there are no canonical correlations significant at the .05 level. The null hypothesis, therefore, is retained.

With respect to hypothesis 17, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.

Hypothesis 18. There is no significant canonical correlation between a linear combination of motivation variables C:Ca, C:Ho, C:Fr, C:Na, C:SE, C:SS, C:Ma, C:Pg, C:As, C:Sw on the one hand and a linear combination of health-habit variables 11, 12, 13,
TABLE 58

CANONICAL CORRELATION OF HYPOTHESIS 17

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>.123</td>
<td>108.214</td>
<td>100</td>
<td>.273</td>
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<tr>
<td>2</td>
<td>.292</td>
<td>.085</td>
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<td>.701</td>
</tr>
<tr>
<td>3</td>
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<td>.059</td>
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<td>4</td>
<td>.206</td>
<td>.042</td>
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<td>.037</td>
<td>23.826</td>
<td>36</td>
<td>.940</td>
</tr>
<tr>
<td>6</td>
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<td>.025</td>
<td>13.978</td>
<td>25</td>
<td>.962</td>
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<td>.959</td>
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<td>9</td>
<td>.037</td>
<td>.001</td>
<td>.363</td>
<td>4</td>
<td>.985</td>
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<td>.002</td>
<td>.000</td>
<td>.001</td>
<td>1</td>
<td>.975</td>
</tr>
</tbody>
</table>

14, 15, 16, 17, 18, 19, 20 on the other.

Table 59 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 18. All numbers have been rounded to three decimal places.

The data in table 59 indicate that there are no canonical correlations significant at the .05 level. The null hypothesis, therefore, is retained.

With respect to hypothesis 18, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.
Hypothesis 19. There is no significant canonical correlation between a linear combination of motivation variables C:Ca, C:Ho, C:Fr, C:Na, C:SE, C:SS, C:Ma, C:Pg, C:As, C:Sw on the one hand and a linear combination of health-habit variables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 on the other.

Table 60 presents the canonical correlation coefficient for each set of equations, the proportion of variance shared by the two composites, and the significance tests for the ten significant functions of hypothesis 19. All numbers have been rounded to three decimal places.

The data in table 60 indicate that there are no canonical
correlations significant at the .05 level. The null hypothesis, therefore, is retained.

TABLE 60
CANONICAL CORRELATION OF HYPOTHESIS 19

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
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<td>117.004</td>
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<td>.271</td>
<td>.073</td>
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<td>.729</td>
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<td>.246</td>
<td>.061</td>
<td>37.110</td>
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<td>.180</td>
<td>.032</td>
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<td>.023</td>
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<td>.014</td>
<td>6.208</td>
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<td>.095</td>
<td>.009</td>
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<td>.000</td>
<td>.101</td>
<td>1</td>
<td>.750</td>
</tr>
</tbody>
</table>

With respect to hypothesis 19, there is not sufficient reason to believe that motivation, as composed by this combination of ten dimensions, is related to the health habits selected.

Hypothesis 20. There is no significant canonical correlation between a linear combination of motivation variables C:Ca, C:Ho, C:Fr, C:Na, C:SE, C:SS, C:Ma, C:Pg, C:As, C:Sw on the one hand and a linear combination of health-habit variables 1, 2, 3, 4, 5, 16, 17, 18, 19, 20 on the other.

Table 61 presents the canonical correlation coefficient for
each set of equations, the proportion of variance shared by the two
composites, and the significance tests for the ten significant
functions of hypothesis 20. All numbers have been rounded to three
decimal places.

The data in table 61 indicate that there are no canonical
correlations significant at the .05 level. The null hypothesis,therefore, is retained.

TABLE 61
CANONICAL CORRELATION OF HYPOTHESIS 20

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Proportion of Variance Shared</th>
<th>Approximate Chi-square</th>
<th>d.f.</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.123</td>
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<tr>
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<td>66.274</td>
<td>81</td>
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<td>.024</td>
<td>14.535</td>
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<td>.009</td>
<td>3.460</td>
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<td>.005</td>
<td>.000</td>
<td>.007</td>
<td>1</td>
<td>.933</td>
</tr>
</tbody>
</table>

With respect to hypothesis 20, there is not sufficient
reason to believe that motivation, as composed by this combination
of ten dimensions, is related to the health habits selected.
Summary of Chapter IV

Chapter IV first presented information about the data. Then, correlation between a combination of personality-motivation variables and a combination of health-habit variables was discussed.

The twenty hypotheses formulated for this study were tested by means of canonical correlation analysis. Thirteen null hypotheses (1, 2, 3, 4, 6, 7, 8, 10, 11, 13, 14, 15, 16) were rejected beyond the .05 level, while seven (5, 9, 12, 17, 18, 19, 20) were retained.
Summary of the Problem

The main concern of this study was to gain understanding regarding certain relationships between personality-motivation and behavioral commitment to certain health teachings of Seventh-day Adventists. Adventists hold that such commitment is essential to optimum spiritual nurture. That is to say, it is indispensable to the enterprise of Christian character development.

Investigation focused on sixteen personality, forty motivation, and twenty health-habit variables.

The review of literature revealed that personality-motivation is often related to the practice, or lack of practice, of specific health habits. It was decided therefore that the relationship between a combination of such traits on the one hand, and a combination of health-habit variables on the other, should be investigated as an initial step toward deepened understanding.

Selected personality-motivation variables were drawn from the Sixteen Personality Factor Questionnaire and Motivation Analysis Test while specific health habits were drawn from the writings of Mrs. Ellen G. White, considered by Seventh-day Adventists to have been an inspired author.

Theoretical considerations led to the formulation of twenty
research hypotheses concerned with the relationship between various combinations of the several variables under consideration.

Summary of the Methodology

The population for this study is all 5,280 baptized Seventh-day Adventist church members living within 250 miles of a central point in the province of British Columbia, Canada. A sample of 325 church members was selected from the population by a random method and asked to complete three questionnaires, one on personality, one on motivation, and one on health-habit practice.

A total of 271 persons, or 83 percent, responded, most on occasion of twelve data-gathering events held in cooperation with local pastors at strategically located sites throughout the province. Some, unable to attend these group events, responded in one-to-one settings, and some through her majesty's postal service, this latter group signing a statement indicating that the questionnaires had been completed under carefully prescribed conditions. Anonymity was guaranteed the church members in their responses. The data were gathered over a period of six months in the latter part of 1979.

The analysis of data was done at the Andrews University Computing Center. The major form of analysis used was canonical correlation analysis.

Summary of the Findings

Various pieces of information came to light as a result of the study which were not directly related to the research hypotheses. Certain of these may be summarized as follows.
1. Four of the twenty health habits are being practiced by 50 percent or less of the church members studied. They are spiritual nurture, supper intake, vegetarian lifestyle, and sweets intake with 68, 66, 62, and 50 percent respectively, not following S.D.A. health teaching regarding these habits.

2. A notable majority of respondents reported that prior to completion of the questionnaires they were aware that the church recognized the value of the health habits being considered.

3. An analysis of health habit practice by age group indicates that differences exist among various age categories.

4. A similar analysis of health habit practice by occupational group indicates that differences exist among these categories as well.

5. Ninety-two percent of those responding reported regular monthly church attendance.

6. One out of ten reported that a health professional played a major role in their conversion experience.

7. Nearly one out of four reported that the health message played a major role in their conversion experience.

The relationship of personality-motivation variables to health-habit practice may be summarized as follows:

1. Those Seventh-day Adventists who score lower on Factor F (tending to be more sober as opposed to being happy-go-lucky) and higher on Factor C (tending to be more emotionally stable as opposed to being affected by feelings) tend to follow S.D.A. health teaching with regard to caffeine ingestion and refined food intake.

2. Those Seventh-day Adventists who score higher on
Factor H (tending to be more venturesome as opposed to being shy), higher on Factor Q3 (tending to be more controlled as opposed to being undisciplined), higher on Factor G (tending to be more conscientious as opposed to being expedient), lower on Factor Q1 (tending to be more conservative as opposed to being experimenting), lower on Factor F (tending to be more sober as opposed to being happy-go-lucky), and lower on Factor B (tending to be more concrete-thinking as opposed to being abstract-thinking) tend to follow S.D.A. health teaching with regard to spiritual nurture.

3. Those Seventh-day Adventists who score lower on Factor H (tending to be more shy as opposed to being venturesome), higher on Factor F (tending to be more happy-go-lucky as opposed to being sober), lower on Factor Q3 (tending to be more undisciplined as opposed to being controlled), and lower on Factor G (tending to be more expedient as opposed to being conscientious) tend not to follow S.D.A. health teaching with regard to spiritual nurture and refined food-intake.

4. Those Seventh-day Adventists who score lower on Factor F (tending to be more sober as opposed to being happy-go-lucky) and higher on Factor H (tending to be more venturesome as opposed to being shy) tend to follow S.D.A. health teaching with regard to caffeine ingestion.

5. Those Seventh-day Adventists who score lower on U:SE (tending to have lower need levels with respect to the Superego Sentiment), lower on U:Fr (tending to have lower need levels with respect to the Fear Erg), lower on U:Ho (tending to have lower need levels with respect to the Home-parental Sentiment), higher on U:Ma
(tending to have higher need levels with respect to the Mating Erg),
and higher on U:Na (tending to have higher need levels with respect
to the Narcism-comfort Erg) tend not to follow S.D.A. health
teaching regarding spiritual nurture.

6. Those Seventh-day Adventists who score higher on U:Sw
(tending to have higher need levels with respect to the Sweetheart-
spouse Sentiment), lower on U:SE (tending to have lower need levels
with respect to the Superego Sentiment), lower on U:Fr (tending to
have lower need levels with respect to the Fear Erg), and higher
on U:Pg (tending to have higher need levels with respect to the
Pugnacity-sadism Erg) tend not to follow S.D.A. health teaching
regarding spiritual nurture.

7. Those Seventh-day Adventists who score lower on U:SE
(tending to have lower need levels with respect to the Superego
Sentiment), higher on U:Pg (tending to have higher need levels with
respect to the Pugnacity-sadism Erg), higher on U:Na (tending to
have higher need levels with respect to the Narcism-comfort Erg),
and lower on U:Ho (tending to have lower need levels with respect
to the Home-parental Sentiment) tend not to follow S.D.A. health
teaching regarding caffeine ingestion.

8. Those Seventh-day Adventists who score higher on I:Pg
(tending to have higher satisfaction levels with respect to the
Pugnacity-sadism Erg), higher on I:Sw (tending to have higher
satisfaction levels with respect to the Sweetheart-spouse Sentimen-
t), lower on I:Ho (tending to have lower satisfaction levels
with respect to the Home-parental Sentiment), and higher on I:Na
(tending to have higher satisfaction levels with respect to the
Mating Erg) tend not to follow S.D.A. health teaching regarding spiritual nurture, supper intake, and sleep regularity.

9. Those Seventh-day Adventists who score lower on I:Pg (tending to have lower satisfaction levels with respect to the Pugnacity-sadism Erg), higher on I:Ho (tending to have higher satisfaction levels with respect to the Home-parental Sentiment), lower on I:Ma (tending to have lower satisfaction levels with respect to the Mating Erg), lower on I:Sw (tending to have lower satisfaction levels with respect to the Sweetheart-spouse Sentiment), and lower on I:Na (tending to have lower satisfaction levels with respect to the Narcism-comfort Erg) tend to follow S.D.A. health teaching regarding spiritual nurture and supper intake, tend not to follow S.D.A. health teaching regarding leisure activity, and tend to follow S.D.A. health teaching regarding sleep regularity and refined-food intake.

10. Those Seventh-day Adventists who score lower on T:Na (tending to have lower total energy investment with respect to the Narcism-comfort Erg) and lower T:Pg (tending to have lower total energy investment with respect to the Pugnacity-sadism Erg) tend to follow S.D.A. health teaching regarding caffeine ingestion and cheese selection.

11. Those Seventh-day Adventists who score higher on T:Na (tending to have higher total energy investment with respect to the Narcism-comfort Erg), lower on T:SE (tending to have lower total energy investment with respect to the Superego Sentiment), higher on T:Pg (tending to have higher total energy investment with respect to the Pugnacity-sadism Erg), higher on T:Sw (tending to
have higher total energy investment with respect to the Sweetheart-spouse Sentiment), and lower on T:Ho (tending to have lower total energy investment with respect to the Home-parental Sentiment) tend not to follow S.D.A. health teaching regarding spiritual nurture.

12. Those Seventh-day Adventists who score higher on T:Pg (tending to have higher total energy investment with respect to the Pugnacity-sadism Erg), higher on T:Sw (tending to have higher total energy investment with respect to the Sweetheart-spouse Sentiment), higher on T:Na (tending to have higher total energy investment with respect to the Narcism-comfort Erg), higher on T:Ma (tending to have higher total energy investment with respect to the Mating Erg), and lower on T:Ho (tending to have lower total energy investment with respect to the Home-parental Sentiment) tend not to follow S.D.A. health teaching regarding spiritual nurture and tend to follow S.D.A. health teaching regarding leisure activity.

13. Those Seventh-day Adventists who score lower on T:SE (tending to have lower total energy investment with respect to the Superego Sentiment) and lower on T:Ma (tending to have lower total energy investment with respect to the Mating Erg) tend not to follow S.D.A. health teaching regarding snack ingestion and leisure activity, tend to follow S.D.A. health teaching regarding fresh-air intake, and tend not to follow S.D.A. health teaching regarding sleep regularity.

14. Those Seventh-day Adventists who score lower on T:Na (tending to have lower total energy investment with respect to the Narcism-comfort Erg) tend to follow S.D.A. health teaching regarding caffeine ingestion and water intake and tend not to follow S.D.A.
health teaching regarding weight control.

Because of the nature of the statistical method used, it is not possible to make a definitive statement regarding the relationship between individual health habits and individual personality or motivational traits. Certain personality and motivation variables, however, seem to be strongly related to the practice of health habits. Such highlight findings are notable and may be summarized as follows:

1. In all four analyses of combinations of personality variables and combinations of health-habit variables it was found that church members scoring lower in Factor F (tending to be more sober as opposed to being happy-go-lucky) tended to follow S.D.A. health teaching. In three of these four analyses, Factor F appeared in connection with higher scores on Factor H (the tendency to be more venturesome as opposed to being shy). And in two of the four analyses, both Factors F and H appeared in connection with higher scores on Factor Q3 (the tendency to be more controlled as opposed to being undisciplined) and on Factor G (the tendency to be more conscientious as opposed to being expedient).

Repeating themselves then as they do, Factors F, H, Q3, and G, in varying degrees of magnitude, appear to be important variables related to the practice of health habits.

Obversely, health habits of caffeine ingestion, refined-food intake, and spiritual nurture appeared two times each in the four analyses, suggesting that they are important variables related to structure of personality.

2. In three out of four analyses of combinations of
unintegrated motivation variables and combinations of health-habit variables it was found that church members scoring higher in Dynamic Structure U:SE (tending to have higher need levels with respect to the Superego Sentiment) tended to follow S.D.A. health teaching. In two out of these three analyses, U:SE appeared in connection with higher scores on U:Ho (the tendency to have higher need levels with respect to the Home-parental Sentiment) and lower scores on U:Na (the tendency to have lower need levels with respect to the Narcism-comfort Erg). On a different pair of the three analyses, U:SE appeared in connection with higher scores on U:Fr (the tendency to have higher need levels with respect to the Fear Erg). On the last pair of the three analyses, U:SE appeared in connection with lower scores on U:Pg (the tendency to have lower need levels with respect to the Pugnacity-sadism Erg).

Repeating themselves as they do, then, Dynamic Structures U:SE, U:Ho, U:Na, U:Fr, and U:Pg, in varying degrees of magnitude, appear to be important variables related to the practice of health habits.

Obversely, the health habit of spiritual nurture appeared two times in the four analyses, suggesting that it is an important variable related to structure of unintegrated motivation.

3. In two out of four analyses of combinations of integrated motivation variables and combinations of health-habit variables it was found that church members scoring higher in Dynamic Structure I:Ho (tending to have higher satisfaction levels with respect to the Home-parental Sentiment), lower in I:Ma (the tendency to have lower satisfaction levels with respect to the Mating
Erg), I:Pg (the tendency to have lower satisfaction levels with respect to the Pugnacity-sadism Erg), and I:Sw (the tendency to have lower satisfaction levels with respect to the Sweetheart-spouse Sentiment) tended for the most part to follow S.D.A. health teaching.

Repeating themselves as they do, then, Dynamic Structures I:Ho, I:Ma, I:Pg, and I:Sw appear to be important variables related to the practice of health habits.

Obversely, the health habits of sleep regularity, spiritual nurture, and supper intake appeared two times each, in the four analyses, suggesting that they are important variables related to structure of integrated motivation.

4. In all four analyses of combinations of total motivation variables and combinations of health-habit variables it was found that church members scoring lower in Dynamic Structure T:Na (tending to have lower total energy investment with respect to the Narcism-comfort Erg) tended for the most part to follow S.D.A. health teaching. On three of these four analyses T:Na appeared in connection with lower scores on T:Pg (the tendency to have lower total energy investment with respect to the Pugnacity-sadism Erg). And on two of the four analyses, both T:Na and T:Pg appeared in connection with a higher score on T:Ho (the tendency to have higher total energy investment with respect to the Home-parental Sentiment) and a lower score on T:Sw (the tendency to have lower total energy investment with respect to the Sweetheart-spouse Sentiment). On the same two analyses, church members scoring higher on T:SE (tending to have higher total energy investment with respect to the Superego
Sentiment) tended for the most part to follow S.D.A. health teaching.

Repeating themselves as they do, then, Dynamic Structures T:Na, T:Pg, T:Ho, T:Sw, and T:SE, in varying degrees of magnitude, appear to be important variables related to the practice of health habits.

Obversely, the health habits of caffeine ingestion, spiritual nurture, and leisure activity appeared two times each, in the four analyses, suggesting that they are important variables related to structure of total motivation.

5. It is particularly interesting to note that in all twenty analyses of combinations of personality-motivation variables and combinations of health-habit variables it was found that Personality Factors F (Sober versus Happy-go-lucky) and H (Shy versus Venture-some), appearing four and three times, respectively, and Motivational Dynamic Structures T:Na (Narcism-comfort Erg), T:Pg (Pugnacity-sadism Erg), and U:SE (Superego Sentiment), appearing four, three, and three times, respectively, emerge more frequently than any others, suggesting that they are especially important variables related to health-habit practice. In the same analyses, health habits of Spiritual nurture and caffeine ingestion, appearing eight and five times, respectively, emerge more frequently than any others, suggesting that they are especially important variables related to structure of personality-motivation.

Conclusions

From the descriptive findings related to health-habit practice certain points emerge:
1. It is encouraging that a notable number of Adventists are living in harmony with the church's health teachings. This indicates the lifestyle is satisfying enough that many members continue to practice it.

2. Health habits which are least followed are those which reflect the church's health teaching regarding spiritual nurture, supper intake, vegetarian lifestyle, and sweets intake. If those charged with responsibility for health ministry could address their efforts to these habits, it seems that adherence to such, and the parallel tenor of religious experience, could be substantially improved. In connection with the greatest problem area, that of inadequate spiritual nurture, White (1898) states, "It would be well for us to spend a thoughtful hour each day in contemplation of the life of Christ" (p. 83). White (1905) then relates such practice of personal daily devotion to the motivation necessary for adherence to habits of healthful living. "Not until the life of Christ becomes a vitalizing power in our lives can we resist temptations that assail us from within and from without" (p. 130).

3. Health-habit practice differs between age groups and between occupational groups. This suggests the need for a variety of approaches. This means, for example, that one's approach to the young person might differ from the approach used for the middle-aged Adventist, or that an approach tailored to the homemaker might not fit the laborer.

4. The fact that 92 percent of the respondents reported regular monthly church attendance leads to the conclusion that a notable number of individuals currently not practicing health
habits are persons of continuing and substantial importance to the
church and not a fringe-element whose needs might easily be swept
under the rug. This is especially important as many of these
people tend by nature to be part of the woodwork, a shyer group
whose needs might not be readily noticed.

5. Both health professionals and the health message are
of notable importance in attracting non-Adventists to the church.
Therefore, both should be given more prominence and encouragement
than in the past.

Relative to the statistical findings, it can with confidence
be stated that the kinds of relationships hypothesized at the out-
set do exist. The present study has shown that both personality
and motivation are related to behavioral commitment to certain Ad-
ventist health teachings.

Further, certain of the highlight findings, notably the
fifth and final illusion, page 145, point to the potential indentifi-
cation of a personality-motivation syndrome operating in the
corporate life of Adventist health-agonists, those who fail to
follow one or more of the health habits being considered.

This group tends to be more impulsive, carefree, heedless,
young, and desirous of group favor, less concerned about achieving,
and in non-threatening situations, more talkative, cheerful, and
enthusiastic.

At the same time, they tend, in most settings, to be more
shy, restrained, and timid, disturbed by feelings of inferiority,
slow in expressing themselves, and of such a nature that they
prefer one or two close friends to larger groups; additionally they
tend to be more emotionally cautious, threat sensitive, and apt to be embittered.

Further, this group tends to be more driven by concerns for personal comfort, possessing more of a basic motivating drive toward sensuous self-indulgence of all kinds, to gratification of appetite, to ease, to self-love, and avoidance of onerous duties.

Another constituent element of the syndrome suggests that this group tends also to be more driven by the pugnacious and hostile urge to attack, to damage, to inflict pain, and destroy.

Finally, they may be characterized as having less conscience development, tending to suffer less of the tension, discomfort, or guilt which arises from committing acts that violate their own value systems or the value systems they perceive to be held by others; they tend to be more preoccupied with materialistic secular activities and less concerned for the welfare of others, a misanthropic attitude reflecting either hostility or a loss of ability to love arising from some form of affectional deprivation.

The potential identification of this "health-agonistic syndrome" represents both a major breakthrough in understanding and a signal challenge to those charged with responsibility for Adventist health ministry. It is now quite clear that a family of health-habit practices is moving together with a family of personality-motivation variables.

In terms of implications for spiritual nurture, one can not help but notice that persons scoring high on personality Factor F, low on Factor G, and low on Factor Q3, tend not to follow a number of health habits. These personality traits are
the major characteristics associated with the secondary 16 P.F. measure of the broader dimension of character. In this regard also, the unintegrated motivation dynamic of Superego Sentiment is associated with the broader dimension of character. It is interesting to note that each of these correlates with the intuitively expected direction of health-habit practice. At the outset it was pointed out that Adventists associate character development with positive health-habit practice. The present study reveals that the most important 16 P.F.-M.A.T. traits that build into character are directly related to such practice. The question must be asked, if one does not attend to the health-habit practice, what is he doing to the character development? Conversely, if one does not attend to the character development, what is he doing to the health-habit practice? The two are correlated. They go up and down together. Is it possible that by strengthening one a person can strengthen the other? Putting it another way, it is clear that the practice of health habits and traits relating to character development are tied together. Could it be that in strengthening either one, the two would remain tied together?

In assessing psychological implications which emerge in the wake of the canonical findings, one cannot ignore that health-habit practices are associated with the broader habit styles of living reflected in the personality variables and the broader life concerns reflected in the motivational dynamics. Some work has been done, not yet reported, in making changes in personality traits and thus practice in lives. Is it possible that in helping an individual to make personality change, one might assist him in
making health-habit change? In helping a person make health habit change, could one assist him in changing traits of personality?

In contemplating implications for practice, one is led to ask, What is the clinical responsibility of Adventist health- and faith-professionals? The descriptive findings freight implications for the concerned Adventist who has to date assumed that the church's health message was, on the whole, being practiced faithfully by the membership, and that his efforts therefore should be primarily directed toward non-Adventists, both in community and retreat settings. This study shows that all is not well with the church. The implication is that health-ministry leadership ought to assess what it has done, what it has failed to do, and what it plans to do in the future. Is it possible that church members themselves are in need of at least some of the attention currently being given others? Might it be that such attention could create a model Adventist people capable of attracting the secular mind in a way heretofore unknown? The study's statistical findings also freight clinical implications. There is sufficient evidence to postulate that the health-agonistic syndrome exists. If further study demonstrates that it does, there remains the challenge of equipping Adventist health, faith, and educational professionals to recognize and remediate the syndrome. Is it possible that the church will need, on the one hand, to provide certain of these individuals with training in use of the 16 P.F. and M.A.T., or similar instruments, and on the other hand, encourage both church members and persons preparing to become such, to complete these instruments, together
with an A.L.Q. format, in an effort to better understand how they can cooperate with God in the development of character?

Speaking now to the issue of immediate action, the following question is posed. Should the Adventist pastor, or doctor, sense the need reflected in the descriptive findings, or, should he, though otherwise unaware of the fact that certain of his members are not following various of the church's health teachings, recognize the presence of the health-agonistic syndrome at play in the personality-motivation of his people, what experiences could he, with profit, lead his congregation into? This question is raised in full recognition of the fact that it cannot be said whether traits of personality-motivation cause poor health-habit practice, or whether such practice causes the manifest personality-motivation traits, or whether both are caused by some other factor. It can only be said that they are related. But in order to prevent or remediate poor health-habit practice, and thus encourage character development, one must ask, Where is the best place to break into the cycle? A number of approaches will need to be explored, of course. For the present, however, the alert and concerned pastor, or doctor, might:

1. Recognize that the time has come to shift the major focus of his health-ministry efforts, at least for a time, from the secular populace to the church members themselves.

2. Prayerfully assess both his own theology of health and his own lifestyle, seeking, with appropriate motivation, to model properly.
3. In sharing with his people, emphasize both the positive and the spiritual nature of health-habit practice.

4. In balanced fashion, take active advantage of health-ministry programs presently available, for example: Better Living Breakthrough, Adventures in Adventist Living, "Lifeline" Health Series, Vegetarian Cooking School, Keys to Total Health, Century 21 Better Living Institute.

5. Encourage his members in a personal self-growth program, suggesting readings from the Adventist health classics, Counsels on Diet and Foods, Ministry of Healing, The Story of Our Health Message, and others, together with their study guides, perhaps bringing "health nuggets" from the above into the Divine worship service as a regular feature.

6. Look into values clarification and other techniques which lend themselves to Christian health ministry.

7. Together with his colleagues, develop and actively pursue both short and long-range goals for health ministry, taking into account his people's needs, working patiently with the willing, and bearing in mind that all may not respond as both he and the Lord might desire.

8. Encourage placement of health-minded church members in key positions of influence and responsibility, recognizing that such will be less prone to careless decision, timidity in expression of views, preoccupation with personal comfort, the expression of hostility, or undue preoccupation with materialistic secular concerns.

Beyond the above, if the health-agonistic syndrome can be
confirmed, health-ministry programs will need to be developed which will appeal to individuals who manifest the syndrome—individuals who are more happy-go-lucky, shy, comfort-oriented, pugnacious, and somewhat irresponsible. Such programs must, at one and the same time, both accommodate and confront these individuals, appealing in such a way that they effectively encourage healthful living without alienating. Clearly such health packaging and promotion will take prayerful discernment.

Recommendations for Further Research

With the present study, a door has been opened suggesting several lines of further investigation.

1. It would be well to extend the research to other groups of Adventists in order to determine the pattern of relationships present.

2. It would be enlightening to extend the study to other groups such as Mormons and Jews whose religious faith contains specific teachings regarding the practice of health habits. Of course the A.L.Q. would need to be modified somewhat. It would be particularly interesting to compare the findings of such studies with those of the present investigation.

3. A valuable contribution might be made by selecting and measuring relationships between other personality and/or other motivation variables on the one hand and health-habit variables on the other.

4. It would be helpful to analyze both the health and personality-motivation variables in light of demographic information.
This would facilitate the identification of various sub-groups within the population which might have needs for specific forms of health ministry.

5. Since the statistical technique used in this study did not consider the variables in isolation, it would be useful to examine the data by means of other statistical tools which allow such consideration in order to verify the highlight findings of this study.

6. Upon positive identification of isolated personality-motivation traits relating to health-habit practice, it would be useful, using randomly selected experimental and control groups, to determine the effects of various personality modification treatments on health-habit practice.

7. Upon positive identification of isolated health habits relating to personality-motivation, it would be useful to conduct similar studies in an effort to determine the effects of various health-habit modification treatments on personality-motivation structure.

In short, this study should be only the first in a series. Some light has been shed on the factors which are operating where lack of behavioral commitment to Adventist health teaching is found. Much more work is called for. Probably the problem can never be completely solved, but careful research will result in continued progress. The crucial nature of the problem demands the best efforts of Adventist scholars.
Summary of Chapter V

Chapter V has briefly summarized the problem, the methodology, and the findings of a study on the relationship between selected personality-motivation variables on the one hand and behavioral commitment to certain health teachings of Seventh-day Adventists on the other. A number of conclusions have been drawn from the findings and recommendations set forth for further research.
APPENDICES
APPENDIX A

THE SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE
Krug (1977) gives the following capsule descriptions of the 16 P.F. traits. (pp. 36-39)

### 16 P.F. TEST PROFILE

<table>
<thead>
<tr>
<th>Low Score Description</th>
<th>Trait</th>
<th>High Score Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low A scores are usually recorded by coolly reserved and aloofly critical individuals who tend to excel in those careers which require a minimum of interpersonal contacts. Generally, they are particularly adapted to work alone and to deal with abstract ideas and theories. They frequently excel at work requiring precision and rigid adherence to detail.</td>
<td></td>
<td>High A scores are usually recorded by easygoing individuals who are generally warmhearted, generous, and adaptable in their interpersonal relationships. These persons tend to be sincere, cooperative, and sympathetic with their associates. If married, they would probably be rated by their spouses as being softhearted and affectionate. High scorers tend to be successful in careers requiring extensive interpersonal contacts.</td>
</tr>
<tr>
<td>CONCRETE-THINKING: less intelligent, dull, (Lower scholastic mental capacity).</td>
<td>B</td>
<td>ABSTRACT-THINKING: more intelligent, bright (higher scholastic mental capacity).</td>
</tr>
<tr>
<td>Low B scores usually identify those individuals who are extremely anxious, profoundly depressed, careless in answering the questionnaire, or who possess lower than average IQ.</td>
<td></td>
<td>High B scores usually identify thoughtful, cultured individuals with high intelligence. These persons tend to be conscientious, persevering, and self-assertive and are inclined to be alert and independent minded.</td>
</tr>
</tbody>
</table>
Low C scores usually identify individuals who to some degree lack patience, perseverance, and self-control. Such individuals may tend toward inappropriate or excessive display of the emotions of sociability, aggressive self-assertion, and anger and tend to be excitable, easily upset, and temperamental.

High C scores usually identify emotionally stable individuals who act only after adequate deliberation and then proceed with patient perseverance. Such persons tend to be realistic, restrained, and constant in attitudes and interests and usually tend to be calm and even tempered.

HUMBLE: mild, easily led, docile, accommodating. (Submissiveness).

Low E scores usually identify modest individuals who are inclined to be accommodating, docile, and somewhat passive. Such individuals tend to be timid, tactful, and conforming.

High E scores usually identify strongly individualistic persons who are self-assertive and confidently aggressive. Such individuals tend to be self-centered but not necessarily selfish. They tend to possess a healthy appetite for adventure and the capacity for being dominant in many interpersonal relationships. Generally, they enjoy group activities and frequently assume leadership roles. These forceful and aggressive individuals must exercise considerable diplomacy and tact if they are to avoid provoking resentment in others.

SOBER: taciturn, serious, (Desurgery).

Low F scores are usually recorded by sober and taciturn individuals whose behavior is generally restrained and deliberate. They tend to be meditative, pessimistic, introspective, and scrupulously correct. These persons often possess an extraordinary tolerance for relatively monotonous work and, indeed, are inclined to be unduly upset by unexpected events or rapidly changing situations.

High F scores are usually recorded by sociable individuals who tend to be cheerful, optimistic, and energetic. Such individuals tend to be resilient and resourceful and recover rapidly from anger. They usually possess an abundance of energy and a high level of enthusiasm. They tend to be quick in arriving at "common sense" solutions to problems. Generally, they enjoy travel and work that involves frequent change.
EXPEDIENT: disregards rules, (Weaker superego strength).

Low G scores carry two kinds of interpretation. Among those persons who possess relatively high social status and who are highly intelligent and intellectually sophisticated, low scores may suggest the qualities of flexibility and adaptability. For relatively unsophisticated individuals of lower intelligence and lower social status, a low G score suggests possible difficulty in accepting and adhering to the middle-class virtues of honesty, charity, and responsibility. Those in this second group generally would need to resist tendencies toward idleness, irresponsibility, emotional dependence, and self-pity.

SHY: timid, threat-sensitive, (Threctia).

Low H scores usually identify timid and inhibited individuals who tend to be taciturn, reserved, and formal. Such self-contained individuals are often uneasy and self-conscious when in a group or in the presence of strangers. Many individuals who score low on this index tend to be responsible, cautious, and conscientious. They tend to be shy and may withdraw from social approaches by others. They may feel uncomfortable at work involving extensive interpersonal contacts. However, they often excel at precision work which demands attention to detail.

CONSCIENTIOUS: persistent, moralistic, staid, (Stronger superego strength).

High G scores usually identify persevering, conscientious individuals who readily accept and reliably discharge responsibility. These persons are generally self-exacting in character and often seem to be directed by an overpowering sense of duty. As a rule, they are hard workers who are serious, cultured, and considerate of others. They may possess a somewhat puritanical regard for reputation.

VENTURESOME: uninhibited, socially bold, (Parmia).

High H scores usually identify socially self-confident individuals who tend to be bold, spontaneous, and uninhibited in their interaction. These persons usually relate easily and comfortably with persons of both sexes. They tend to be emotionally "thick-skinned" and generally are capable of absorbing considerable amounts of wear and tear in emotionally charged interpersonal relations without undue exhaustion.
TOUGH-MINDED: self-reliant, realistic, (Harria).

**Low I** scores usually identify practical, self-reliant individuals who tend to be realistic, courageous, and tough-minded. Often their realistic attitudes have been developed by direct exposure to harsh realities. They are often rugged, patient, and self-effacing and also tend to be poised, logical, and shrewd. They can be decidedly businesslike, independent-minded, and popular—popular because they are depended upon by others.

**High I** scores usually identify idealistic and gentle individuals who are inclined to be kindly, soft-hearted, and peace-loving. They may tend to be fastidious, artistic, and given to daydreaming. When excited or threatened they tend to become fearful rather than angry. These persons generally gravitate toward work requiring skill and usually do not function at maximum effectiveness in physically demanding occupations.

TRUSTING: accepting conditions, (Alaxia).

**Low L** scores are usually recorded by cheerful individuals who tend to be friendly and helpful to associates. These persons are inclined to be considerate, adaptable, non-competitive, and concerned about the welfare of others. They also are, by and large, good team workers. They are generally trusting, forgiving, and indulgent.

**High L** scores are usually recorded by moody individuals who tend to be cynical, fault-finding, and markedly suspicious of the motives of others. These persons may find it difficult to fit into a group and generally make poor team workers, preferring self-sufficiency and independence to group action. Often they are jealous and possessive.

PRACTICAL: "down-to-earth" concerns, (Praxernia).

**Low M** scores usually identify practical, logical individuals who tend to be proper, conventional, and matter-of-fact in manner. Such individuals generally possess a high regard for order, morals, and conventions. They usually are punctual and are inclined to

**High M** scores usually identify distinctively individualistic persons who are self-motivated and imaginatively creative. Such individuals tend to be unconventional in many matters, and their individuality may generate rejection by more practical and less creative
be constantly alert and responsive to external realities. They tend to be earnest, conforming, and desirous of conducting themselves in a conventionally acceptable manner. Generally, they pay strict attention to practical matters and avoid eccentricities of behavior that might set them apart from their associates. Consistent alertness, caution, and practical concern all contribute to low frequency of accidents among these individuals.

FORTHRIGHT: unpretentious, genuine but socially clumsy, (Artlessness).

Low N scores are often recorded by naive or sentimental individuals who tend to lack both social skills and keen perception in social situations. Such individuals tend to be spontaneous, artless, and occasionally awkward in social relations. Often they are somewhat socially inflexible in that they fail to gain social skills through experience. On the other hand, they are easily pleased due to a lack of critical capacity.

SELF-ASSURED: placid, secure, complacent, serene, (Untroubled adequacy).

Low O scores are usually obtained by individuals who feel emotionally secure and who routinely display confidence in coping. Such individuals tend to be free of significant feelings of inadequacy and inferiority. They tend to be cheerful and free of undue care and worry.

ASTUTE: polished, socially aware, (Shrewdness).

High N scores are usually recorded by socially skillful individuals who are sophisticated and worldly wise. Such individuals tend to be free of sentimentality and wishful thinking and, as a rule, possess considerable insight into the motives of others.

APPREHENSIVE: self-reproaching, insecure, worrying, troubled, (Guilt proness).

High O scores usually identify self-depreciating individuals who tend to brood and worry excessively. These persons tend to be emotionally very sensitive, tend to become easily discouraged, and are inclined to harbor troublesome feelings of inferiority and inadequacy in meeting even the routine demands.
of daily life. Anyone registering a high score is possibly depressed and therefore may merit clinical evaluation.

<table>
<thead>
<tr>
<th>CONSERVATIVE: respecting traditional ideas, (Conservatism of temperament).</th>
<th>Q1 EXPERIMENTING: liberal, free-thinking, (Radicalism).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Q1 scores are usually obtained by conservative individuals who are inclined to place confidence in what they were taught to believe in childhood. They tend to respect established ideas and traditional beliefs. As a group, they are conservative in the areas of religion and politics. They usually are opposed to innovation and generally seek to postpone change in traditions and conventions.</td>
<td>High Q1 scores are usually obtained by independent-thinking, intellectually oriented individuals who are strongly inclined to question, analyze, and often disparage traditional beliefs. Such individuals tend to be free-thinking and experimental in their approach to life. They enjoy work involving critical analysis, feel comfortable in working alone on projects of interest to them, and find it emotionally rewarding to put their own ideas into action. High scorers on this index generally keep themselves well informed, tend to feel adequate to nearly any task, and usually welcome positions of leadership.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP-DEPENDENT: a &quot;joiner&quot; and sound follower, (Group adherence).</th>
<th>Q2 SELF-SUFFICIENT: resourceful, prefers own decisions, (Self-sufficiency).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Q2 scores usually identify individuals who value or require consultation with peers before making and initiating action. They tend to go along with the group, and they seek social approval. They are receptive to suggestions and usually avoid eccentricities of behavior and dress that would set them apart from the group.</td>
<td>High Q2 scores usually identify decisive and resourceful individuals. They do not seek the agreement of associates and do not require group support in making decisions or in taking action. Such independent-minded individuals are not suggestible and are not influenced greatly by public opinion. High scorers are in the habit of going their own way and may tend to be seclusive, considering most social activities to be wasteful of time.</td>
</tr>
</tbody>
</table>
UNDISCIPLINED: self-conflict, lax, follows own urges, careless of social rules, (Low integration).

Low Q3 scores are usually recorded by those persons who demonstrate small regard for social demands. Such individuals tend to feel uncomfortable when working as a member of a team and may feel maladjusted socially. Often their thinking appears to be haphazardly organized, and they may become overexcited and rattled at times. Also, they may tend to be careless or vague in the expression of their emotions.

RELAXED: tranquil, unfrustrated, composed, (Low ergic tension).

Low Q4 scores are usually recorded by composed and even-tempered individuals who, in general, feel fundamentally satisfied and unfrustrated. Such individuals are not easily annoyed and usually will regain composure quickly after any emotional upset. They are usually emotionally tranquil and are rarely moved to alarm or to anger. They tend to be relaxed and generally free of regret and unreasonable worry. They are inclined to be free of significant sleep disturbances, and they are likely to be listed

CONTROLLED: exacting will power, socially precise, compulsive, (High strength of self-sentiment).

High Q3 scores are usually recorded by self-assured individuals who consistently maintain a disciplined control over their behavior. Such socially correct individuals take care to comport themselves as gentlemen and ladies in interpersonal relationships. They carefully attend to manners, morals, and the maintenance of a good reputation. They are inclined to be effective in guarding against impulsive actions and in resisting temptations of the moment. They avoid insult and injury to their self-respect by consistently behaving in a manner which they themselves find socially acceptable. Their thinking tends to be carefully organized, and they tend to express their emotions in a controlled and precise manner.

TENSE: frustrated, driven, overwrought, (High ergic tension).

High Q4 scores are usually recorded by tense and irritable individuals who are easily annoyed by trivial matters. Such individuals tend to be overwrought and restless. They also tend to be impatient and excitable and can lose their temper easily. Even when tired, these individuals often remain restless and pressured to activity. They are likely to feel frustrated and unsatisfied, and they tend to be easily moved to alarm or to anger. High Q4 scores are often associated with transient situational
as friends by many associates. disturbances.

Because the 16 P.F. is considered by its publisher to be restricted material, it would be inappropriate to include a copy of the test in this study. Qualified persons may obtain the test from the Institute for Personality and Ability Testing, 1602 Coronado Drive, Champaign, Illinois, U.S.A. 61820.
APPENDIX B

THE MOTIVATION ANALYSIS TEST
Cattell, Horn, Sweney, and Radcliffe (1964) give the following capsule descriptions of the M.A.T. traits. (p. 3)

1. **Career Sentiment**: amount of development of interests in a career.

2. **Home-parental Sentiment**: strength of attitudes attaching to the parental home.

3. **Fear Erg**: level of alertness to external dangers (escape)—this is not anxiety.

4. **Narcism-comfort Erg**: level of drive to sensuous, self-indulgent satisfactions.

5. **Superego Sentiment**: strength of development of conscience.

6. **Self-sentiment**: level of concern about the self-concept, social repute, and more remote rewards.

7. **Mating Erg**: strength of the normal, heterosexual or mating drive.

8. **Pugnacity-sadism Erg**: strength of destructive, hostile impulses.

9. **Assertiveness Erg**: strength of the drive to self-assertion, mastery, and achievement.

10. **Sweetheart-spouse Sentiment**: strength of attachment to wife-husband—or sweetheart.

Because the M.A.T. is considered by its publishers to be restricted material, it would be inappropriate to include a copy of the test in this study. Qualified persons may obtain the test from the Institute for Personality and Ability Testing, 1602 Coronado Drive, Champaign, Illinois, U.S.A. 61820.
The Adventist Lifestyle Questionnaire (A.L.Q.) was developed by the Loma Linda University School of Health for use in a prospective epidemiologic study of California Seventh-day Adventists known as the Adventist Health Study. At the time the questionnaire was adapted for use in the British Columbia study, some 37,351 California Adventists had completed it.

The instrument seeks detailed information on various lifestyle characteristics of S.D.A.'s. Each item was carefully selected and pretested.

In modifying the Loma Linda instrument, certain items not directly relevant to the present study were deleted. As modified, the instrument is considered to be: (1) well-designed, (2) adequately field-tested, (3) compatible with its parent Loma Linda version—thereby providing both studies, the British Columbia and the California, with a set of external comparative data, (4) capable of gathering such data as will provide a highly useful bank of information for further study, (5) sufficiently brief.

The modified instrument was piloted with twelve persons representing each of the twelve occupations listed on page seven, question twenty, of the A.L.Q. Suggestions were noted and format changes made. Average time for completion was about thirty minutes.
We are pleased that your responses remain absolutely confidential. We ask, therefore, that you please do NOT write your name on this questionnaire. Please read all of the following instructions carefully.

INSTRUCTIONS FOR MARKING YOUR RESPONSES:

1. Answer each question by placing an "x" on the appropriate line, or supplying the needed information.

2. Erase CLEANSIL any answer you wish to change.

3. Avoid making any stray marks on the answer sheet outside of the blanks provided for marking.

4. Write any comments or explanations ONLY on the back side of the answer sheet.

5. Use an "x" to mark the answer which you think fits you best, even if you are not absolutely sure which is the correct answer for you.

6. As an example of how to answer please note the following two questions about the SPA church which has a worldwide membership of about 3 million and operates 50 colleges and universities.

EXAMPLE: OF HOW TO MARK YOUR ANSWERS

1. What is the approximate total number of members in the SPA church? 2 million or less — $2 million
   3 million or more X

2. How many colleges and universities are operated by the SPA church? 6 7

1
1. Approximately how old were you when you first began to live in a home where someone, other than yourself, was a member of the SDA church?

<table>
<thead>
<tr>
<th>Less than 1 year old</th>
<th>1-4 years old</th>
<th>5-9 years old</th>
<th>10-14 years old</th>
<th>15-19 years old</th>
<th>20-24 years old</th>
<th>25-29 years old</th>
<th>30 or over</th>
<th>I have never lived with an SDA member</th>
</tr>
</thead>
</table>

2. If you have EVER been baptized in the SDA church, approximately how old were you when first baptized?

<table>
<thead>
<tr>
<th>9 years or less</th>
<th>10-14 years old</th>
<th>15-19 years old</th>
<th>20-24 years old</th>
<th>25-29 years old</th>
<th>30-34 years old</th>
<th>35-39 years old</th>
<th>40-44 years old</th>
<th>45-49 years old</th>
<th>50-54 years old</th>
<th>55-59 years old</th>
<th>60-64 years old</th>
<th>65-69 years old</th>
<th>70 years or more</th>
<th>I was never baptized</th>
</tr>
</thead>
</table>

3. What is your sex?

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
</table>

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4. Where was the place of your birth? ________________________________

5. Please write your birthdate in the space provided. ________________________________

6. Approximately how many years have you been a member, either through baptism or profession of faith, of the SDA church?  
   - Less than 1 year  
   - 1-2 years  
   - 3-4 years  
   - 5-9 years  
   - 10-19 years  
   - 20-29 years  
   - 30-39 years  
   - 40-49 years  
   - 50-59 years  
   - 60 or more years  
   - I am not a member

7. True or false: The health message played a major role in your conversion experience. True  False

8. True or false: A health professional, such as a physician, dentist, nurse, or health educator, played a major role in your conversion experience. True  False

9. Before becoming an SDA were you a member of another church? Yes  No

10. If you were a member of another church, what was its name? ________________________________
11. During all the years you have been an Adventist (or lived with an Adventist) how often would you say you have actively participated in the following church affairs?

<table>
<thead>
<tr>
<th>Attendance at Church Social Events:</th>
<th>Nearly always</th>
<th>Frequently</th>
<th>Occasionally</th>
<th>Rarely or never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance at Sabbath School:</td>
<td>3-4 times per month</td>
<td>1-2 times per month</td>
<td>Less than once per month</td>
<td>Seldom or never</td>
</tr>
<tr>
<td>Attendance at the Worship Hour (Church):</td>
<td>3-4 times per month</td>
<td>1-2 times per month</td>
<td>Less than once per month</td>
<td>Seldom or never</td>
</tr>
<tr>
<td>Attendance at Midweek Prayer Meeting:</td>
<td>3-4 times per month</td>
<td>1-2 times per month</td>
<td>Less than once per month</td>
<td>Seldom or never</td>
</tr>
<tr>
<td>Assisting in Adult or Children's Sabbath School Program:</td>
<td>Nearly always</td>
<td>Frequently</td>
<td>Occasionally</td>
<td>Rarely or never</td>
</tr>
<tr>
<td>Assisting in Other Church Activities (Pathfinders, Home Missionary, Health and Welfare, Ingathering, etc.):</td>
<td>Nearly always</td>
<td>Frequently</td>
<td>Occasionally</td>
<td>Rarely or never</td>
</tr>
<tr>
<td>Holding Church Office:</td>
<td>Nearly always</td>
<td>Frequently</td>
<td>Occasionally</td>
<td>Rarely or never</td>
</tr>
</tbody>
</table>

12. Thinking about birth-order, which category applies to you?

<table>
<thead>
<tr>
<th>Only child</th>
<th>First born</th>
<th>Middle born</th>
<th>Last born</th>
</tr>
</thead>
</table>
13. Please think back about your home during the first 15 years of your life. Mark ALL of the items which describe your parents or guardians during the MAJORITY of your first 15 years of life. (Mark separately for mother and father.)

Mark all that apply

**MOTHER or FEMALE GUARDIAN:**
- Member of SDA Church
- Followed vegetarian diet
- Employed by SDA Church
- Warm and understanding toward me
- Somewhat cold and detached
- PERMANENTLY absent from our home

**FATHER or MALE GUARDIAN:**
- Member of SDA Church
- Followed vegetarian diet
- Employed by SDA Church
- Warm and understanding toward me
- Somewhat cold and detached
- PERMANENTLY absent from our home

---

14. Have you EVER experienced a long-term or persistent separation (because of death or other problems) from either of your parents or any other person who was very important to you? (If yes, mark all that apply for both the first fifteen years and last three years of your life. If no, be sure to mark "none.")

**DURING FIRST 15 YEARS OF YOUR LIFE:**
- Father
- Mother
- Brother or sister
- Other relative very close to you
- Very close friend
- None of these

**DURING LAST 3 YEARS OF YOUR LIFE:**
- Spouse
- Son or daughter
- Other relative very close to you
- Very close friend
- None of these

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15. What is your highest grade you completed in school?  

16. Mark every individual grade for which you attended SDA schools.  

Mark all that apply  

Elementary school 1  2  3  4  5  6  7  8  

High School 9  10  11  12  

College 13  14  15  16  

Graduate masters doctoral  

Never attended SDA schools  

17. What is your current marital status?  

Single  

Married  

A marriage beyond the 1st  

Divorced  

Widowed  

18. What is your usual or main occupation? (Do not write "retired." If retired or not now working, record your usual occupation when you were working.)  

Occupation  

19. Which of these descriptions fits you best? (Mark ALL that apply.)  

Out of work Retired  

Student, full or part time Self-employed  

Employed full time by someone else  

Volunteer worker  

Homemaker  

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20. In the first column place an "x" on the line which best describes the occupation you wrote in response to question 18. In the second column, mark the line which best describes the usual or main occupation of your present spouse (or former spouse if widowed or divorced). (If the exact job is not listed, mark the box which comes closest. Mark only one.)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>You</th>
<th>Spouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student (not working full time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House-dar (not employed outside the home)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laborer (general, attendant, farm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>worker, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner or manager of small business,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>agency, or firm (insurance agent,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>contractor, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner or executive of large business or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>high level government agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operators (truck driver, factory machine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>operator, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service worker (fireman, waiter, usher,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bell, maid, bartender, janitor, police,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>porter, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled craftsman or foreman (carpenter,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>plumber, mechanic, factory foreman,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>painter, electrician, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerical and sales (bookkeeper,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>secretary, typist, salesclerk,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>salesman, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionals requiring advanced degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(doctor, lawyer, dentist, college</td>
<td></td>
<td></td>
</tr>
<tr>
<td>professor, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionals requiring college education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(elementary, secondary school teacher,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>engineer, nurse, lab technician, minister,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>accountant, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the above categories fit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. How well satisfied are you with your present job? (very satisfied, somewhat satisfied, not too satisfied, not at all satisfied)
22. How often are you irritated or frustrated by your job? (Or other daily activities, if not employed.)

- Nearly always
- Often
- Sometimes
- Rarely or never

23. For how many years have you worked for an organization owned and operated by the Seventh-Day Adventist Church?

- None
- Less than 1 year
- 1-4 years
- 5-9 years
- 10-19 years
- 20-39 years
- 40 or more years

24. What is your family's approximate level of annual gross income? (Please include income your spouse may be receiving as well.)

- Less than $5,000 per year
- $5,000-$9,999 per year
- $10,000-$14,999 per year
- $15,000-$19,999 per year
- $20,000-$24,999 per year
- $25,000-$29,999 per year
- $30,000-$34,999 per year
- $35,000-$39,999 per year
- $40,000-$44,999 per year
- $45,000-$49,999 per year
- $50,000-$54,999 per year
- $55,000-$59,999 per year
- $60,000-$64,999 per year
- $65,000-$69,999 per year
- $70,000-$74,999 per year
- $75,000-$79,999 per year
- $80,000-$84,999 per year
- $85,000-$89,999 per year
- $90,000-$94,999 per year
- $95,000-$99,999 per year
- $100,000 or more per year

25. What is your racial origin? (Your geographical line of descent?) (For example, white would be European, black would be African, yellow would be Asian, and so forth.)

- African
- American Indian
- Asian
- Australian
- European
- Indian
- Melanesian
- Micronesian
- Polynesian

26. How many times have you changed your place of residence (moved) during the last 10 years?

- No moves
- 1-2 moves
- 3-4 moves
- 5-6 moves
- 7-8 moves
- 9-10 moves
- More than 10 moves
27. How long has it been since you last saw a medical doctor for any reason?
- Less than 1 year
- 1-2 years
- 3-5 years
- Over 5 years

28. Which of the following drugs or medicines do you take fairly regularly (once or more per week)? (If none of these apply, be sure to mark "none.")
- Aspirin, Bufferin, etc.
- Stronger pain reliever
- Medicine for indigestion
- Laxatives
- Tranquilizers (pills for nerves)
- Sleeping pills
- Pep pills (dextromine, amphetamine, "uppers")
- Beer or wine or liquor
- Caffeine drinks (coffee, tea, cola)
- Insulin or pills for diabetes
- Medicine to lower blood pressure
- None of these

29. Do you now live within the city limits of a city or town?
- Yes
- No

30. About how many homes are located within a 1/4 mile radius (2 city blocks) of your home?
- Less than 5
- 5-9
- 10-19
- 100 or more

---

You're about half finished... keep up the good work!
31. When following your usual routine, how frequently do you use alcohol (beer or wine or liquor)?

1. Once or more times per month  
2. Less than once per month  
3. I do not now use alcohol  
4. I have never used alcohol (aside from possibly trying it once or twice)

---

32. This question concerns the regularity and size of your breakfast when you are following your usual routine.

1. I rarely or never eat breakfast  
2. I sometimes eat breakfast BUT NOT with any degree of regularity  
3. I usually eat breakfast regularly though breakfast is NOT USUALLY my biggest meal  
4. I usually eat breakfast regularly AND I usually eat my BIGGEST MEAL at breakfast

---

33. When following your usual routine, how frequently do you use caffeine (regular coffee, NOT decaffeinated; cola beverages such as Coke, Pepsi, R.C., Dr. Pepper, Mountain Dew, etc.; caffeine "keep alert" tablets such as NOSEF, etc.)?

1. Once or more times per month  
2. Less than once per month  
3. I do not now use caffeine  
4. I have never used caffeine (aside from possibly trying it once or twice)
34. This question concerns your selection and use of cheese when you are following your usual routine.

1. I use ripened, sharp, strong cheese (medium or sharp cheddar; semi-soft ripened cheese such as bleu cheese; Roquefort and Limburger and processed cheeses or cheese foods which are a mixture of cheese) once or more times per month

2. I use such ripened, sharp, strong cheese less than once per month

3. I use only fresh, unripened, uncurdled cheeses (such as cottage cheese, keph cheese, ricotta cheese, Neufchatel cream cheese, or skim milk Mozarelly, made from pasteurized milk and curdled without pork products)

4. I do not use cheese of any kind

35. When following your usual routine, how frequently do you use eggs (including those used in recipes)?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I use 7 or more eggs per week</td>
<td>1</td>
</tr>
<tr>
<td>2. I use 3 to 5 eggs per week</td>
<td>2</td>
</tr>
<tr>
<td>3. I use less than 2 eggs per week</td>
<td>3</td>
</tr>
<tr>
<td>4. I do not use eggs at all</td>
<td>4</td>
</tr>
</tbody>
</table>

36. When following your usual routine, how frequently do you get at least 15 minutes of vigorous exercise 3 OR MORE TIMES PER WEEK (running, jogging, vigorous hiking, bicycling or stationary cycling, swimming, tennis, vigorous gardening or home maintenance such as shoveling or hand weeding or wood cutting, etc., or similar vigorous activity during your usual work or daily responsibilities)?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rarely or never</td>
<td>1</td>
</tr>
<tr>
<td>2. Occasionally</td>
<td>2</td>
</tr>
<tr>
<td>3. Frequently</td>
<td>3</td>
</tr>
<tr>
<td>4. Nearly always</td>
<td>4</td>
</tr>
</tbody>
</table>
37. When following your usual daily routine do you get approximately 15 or more minutes of fresh air?

1. Rarely or never  
2. Occasionally  
3. Frequently  
4. Nearly always

38. On the AVHAC weekly, how much time do you spend in the following activities? (Be sure to mark in correct column.)

<table>
<thead>
<tr>
<th>Time with children</th>
<th>Watching Television</th>
<th>Other leisure activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>who live in your home</td>
<td></td>
<td>(hobbies, or sports, etc.)</td>
</tr>
</tbody>
</table>

Not applicable  
1. 0 minutes  
2. 1-9 minutes  
3. 10-19 minutes  
4. 20 or more minutes

39. This question concerns your selection and use of milk when you are following your usual routine.

1. I rarely or never use nonfat (skin) milk, low fat (2%) milk, buttermilk, or soy milk (or skim, low, butter, or soy milk products). I use whole milk

2. I occasionally use nonfat (skin) milk, low fat (2%) milk, buttermilk, or soy milk (or skim, low, butter, or soy milk products). But usually I use whole milk

3. I almost always use skin, low, butter, or soy milk (and/or their products) as opposed to whole milk (and its products)

4. I do not use animal milk (or animal milk products) of any kind

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40. When following your usual routine, how frequently do you use refined foods (white bread, enriched or unenriched, for example) as opposed to unrefined foods (dark or whole grain bread, for example)?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearly always</td>
<td>1</td>
</tr>
<tr>
<td>Frequently</td>
<td>2</td>
</tr>
<tr>
<td>Occasionally</td>
<td>3</td>
</tr>
<tr>
<td>Rarely or never</td>
<td>4</td>
</tr>
</tbody>
</table>

41. On the average weekday (24-hour period), how much time do you spend in sleeping? (Mark the nearest amount of time.)

<table>
<thead>
<tr>
<th>Hours per night</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 or less</td>
<td>1</td>
</tr>
<tr>
<td>9 or more</td>
<td>2</td>
</tr>
<tr>
<td>7 hours</td>
<td>3</td>
</tr>
<tr>
<td>8 hours</td>
<td>4</td>
</tr>
</tbody>
</table>

42. When following your usual routine, about how often do you eat any type of food between your regular meals?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once</td>
<td>1</td>
</tr>
<tr>
<td>Once per day</td>
<td>2</td>
</tr>
<tr>
<td>Less than once</td>
<td>3</td>
</tr>
<tr>
<td>Practically never</td>
<td>4</td>
</tr>
</tbody>
</table>

43. On the average weekday, how much time do you spend in personal devotions?

<table>
<thead>
<tr>
<th>Time</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 minutes</td>
<td>1</td>
</tr>
<tr>
<td>1-29 minutes</td>
<td>2</td>
</tr>
<tr>
<td>30-59 minutes</td>
<td>3</td>
</tr>
<tr>
<td>60 or more minutes</td>
<td>4</td>
</tr>
</tbody>
</table>
44. When following your usual routine, do you get about 5-10 minutes daily exposure to direct sunlight (or outdoor daylight if the sky is overcast)?

1. Rarely or never 1
2. Occasionally 2
3. Frequently 3
4. Nearly always 4

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

45. This question concerns the time and size of your supper when you are following your usual routine.

1. I usually eat my biggest meal after 8 p.m. 1
2. I usually eat my biggest meal between 4 and 8 p.m. 2
3. I usually eat my biggest meal before 4 p.m. 3
4. I usually eat nothing after 4 p.m. 4

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

46. When following your usual routine, about how often do you eat sweets or desserts (pudding, pie, cookies, cake, ice cream, donuts, macaroons, coffee cake, cola beverages such as Coke, Pepsi, R.C., Dr. Pepper, Mountain Dew, etc., or other soft drinks such as 7-Up, root beer, orange soda, etc.)?

1. 5 or more per week 1
2. 3-4 per week 2
3. 1-2 per week 3
4. Less than 1 per week 4

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

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47. When following your usual routine how frequently do you use tobacco?

1. 21 cigarettes (a pack) or more per day 1 __
2. 1-23 cigarettes per day (or use of pipe, chewing tobacco, or snuff) 2 __
3. I do not now use tobacco 3 __
4. I have never used tobacco (aside from possibly trying it once or twice) 4 __

48. About how much water do you usually drink per day?

1. Under 1 glass 1 __
2. 1-2 glasses 2 __
3. 3-5 glasses 3 __
4. Over 5 glasses 4 __

49. What is your best estimate of your present weight and height in normal indoor clothing WITHOUT shoes; AND your best estimate of your frame size?

Weight: (pounds) __ __
Height: (feet) __ (inches) __

Please place NO MARKS below:
Frame size (mark only one):
Small frame (1 __)
Medium frame (2 __)
Large frame (3 __)
50. This question concerns your selection and use of food from animal sources when you are following your usual routine.

1. I use meat, poultry, or fish once or more per month ________
2. I use meat, poultry, or fish less than once per month ________
3. I am a lacto (milk using) and/or ovo (egg using) vegetarian; I use no meat, poultry, or fish whatsoever ________
4. I am a strict vegetarian; I use no animal products of any kind ________

51. This question concerns your awareness of SDA positions relative to certain health habits. (Be sure to mark either YES or NO for each item.)

"Before answering this questionnaire I knew that the SDA church recognizes the value of . . . ."

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I knew</td>
<td>I did not know</td>
</tr>
</tbody>
</table>

1. Abstaining from alcoholic beverages
2. Eating a nutritious breakfast every day
3. Abstaining from caffeinated beverages
4. Using only fresh, mild cheese as opposed to ripe, sharp cheese, if cheese is used at all
5. Limiting use of eggs, if eggs are used at all
6. Getting vigorous exercise daily
7. Getting fresh air daily
8. Taking time daily for leisure activity
9. Using skim, lowfat, butter, or soy milk as opposed to whole milk, if milk is used at all
10. Limiting use of refined foods
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Getting adequate rest nightly</td>
<td>11. Yes ___ No ___</td>
</tr>
<tr>
<td>12. Avoiding between meal snacks</td>
<td>12. Yes ___ No ___</td>
</tr>
<tr>
<td>13. Taking time daily for personal devotions</td>
<td>13. Yes ___ No ___</td>
</tr>
<tr>
<td>14. Getting daily exposure to sunlight</td>
<td>14. Yes ___ No ___</td>
</tr>
<tr>
<td>15. Avoiding late, heavy suppers</td>
<td>15. Yes ___ No ___</td>
</tr>
<tr>
<td>16. Limiting use of sweets</td>
<td>16. Yes ___ No ___</td>
</tr>
<tr>
<td>17. Abstaining from tobacco in any form</td>
<td>17. Yes ___ No ___</td>
</tr>
<tr>
<td>18. Drinking several glasses of water every day</td>
<td>18. Yes ___ No ___</td>
</tr>
<tr>
<td>20. Following a vegetarian diet</td>
<td>20. Yes ___ No ___</td>
</tr>
</tbody>
</table>

THANKS A LOT.... YOUR EFFORT MAY SAVE A LIFE

###
Using standard height and weight tables, values were assigned with regard to A.L.Q. question forty-nine in the following manner:

1. Fifty pounds or more above ideal weight: gross obesity.
2. Twenty percent or more above ideal weight: accepted definition of obesity.
3. Less than 20 percent above ideal weight.
4. Ideal weight or less.

Note that although only 9 percent of the respondents were classified one's or two's, thereby indicating that they are not followers of church teaching with regard to weight control, 41 percent of the population, it seems, is weighing in somewhere above ideal weight (see table 4, p. 65).
# TABLE 27

HEALTH-HABIT PRACTICE BY OCCUPATION

<table>
<thead>
<tr>
<th>Category</th>
<th>Designation</th>
<th>n</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaker</td>
<td>HM</td>
<td>50</td>
<td>18.4</td>
</tr>
<tr>
<td>Student</td>
<td>ST</td>
<td>41</td>
<td>15.0</td>
</tr>
<tr>
<td>Service Worker</td>
<td>SW</td>
<td>30</td>
<td>11.1</td>
</tr>
<tr>
<td>College-degree Professional</td>
<td>CP</td>
<td>29</td>
<td>10.7</td>
</tr>
<tr>
<td>Craftsman-Foreman</td>
<td>CF</td>
<td>27</td>
<td>10.0</td>
</tr>
<tr>
<td>Clerk-Salesman</td>
<td>CS</td>
<td>22</td>
<td>8.1</td>
</tr>
<tr>
<td>Small Businessman</td>
<td>SB</td>
<td>21</td>
<td>7.8</td>
</tr>
<tr>
<td>No Category</td>
<td>NC</td>
<td>14</td>
<td>5.2</td>
</tr>
<tr>
<td>Operator</td>
<td>OP</td>
<td>13</td>
<td>4.8</td>
</tr>
<tr>
<td>Laborer</td>
<td>LA</td>
<td>12</td>
<td>4.4</td>
</tr>
<tr>
<td>Advanced-degree Professional</td>
<td>AP</td>
<td>8</td>
<td>3.0</td>
</tr>
<tr>
<td>Large Businessman</td>
<td>LB</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>Military Serviceman</td>
<td>MS</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Non-respondent</td>
<td>NR</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>

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TABLE 27—Continued

<table>
<thead>
<tr>
<th>Health Habit (Variable number)</th>
<th>Per centage Not Following</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation: HM ST SW CP CF CS SB NC OP LA AP LB MS</td>
<td></td>
</tr>
<tr>
<td>n: 50 41 30 29 27 22 21 14 13 12 8 2 1</td>
<td></td>
</tr>
<tr>
<td>1. Spiritual nurture (13)</td>
<td>48 85 47 62 59 82 81 71 85 92 75 100 100</td>
</tr>
<tr>
<td>2. Supper intake (15)</td>
<td>66 66 37 69 56 77 71 79 69 83 75 0 100</td>
</tr>
<tr>
<td>3. Vegetarian lifestyle (20)</td>
<td>66 49 57 52 67 68 64 92 75 50 50 0</td>
</tr>
<tr>
<td>4. Sweets intake (16)</td>
<td>54 59 53 45 52 32 43 50 69 50 25 0 100</td>
</tr>
<tr>
<td>5. Milk selection (9)</td>
<td>48 49 27 38 52 23 52 43 62 67 25 50 0</td>
</tr>
<tr>
<td>6. Egg intake (5)</td>
<td>52 32 40 41 30 36 43 57 54 75 12 0 0</td>
</tr>
<tr>
<td>7. Snack ingestion (12)</td>
<td>59 23 28 37 67 36 46 50 37 0 100</td>
</tr>
<tr>
<td>8. Leisure activity (8)</td>
<td>42 20 30 52 33 41 62 50 23 67 62 100 0</td>
</tr>
<tr>
<td>9. Cheese selection (4)</td>
<td>40 44 40 38 26 36 48 43 46 42 0 0 0</td>
</tr>
<tr>
<td>10. Caffeine ingestion (3)</td>
<td>20 51 33 24 41 36 52 29 62 33 37 50 0</td>
</tr>
<tr>
<td>11. Exercise regularity (6)</td>
<td>40 22 37 28 22 41 33 36 15 25 12 100 0</td>
</tr>
<tr>
<td>12. Water intake (18)</td>
<td>30 34 27 14 19 36 29 36 31 33 12 50 0</td>
</tr>
<tr>
<td>13. Sleep regularity (11)</td>
<td>22 39 37 21 19 23 33 36 15 17 25 0 0</td>
</tr>
<tr>
<td>14. Breakfast regularity (2)</td>
<td>22 22 27 10 11 32 29 21 15 17 25 0 0</td>
</tr>
<tr>
<td>15. Refined-food intake (10)</td>
<td>16 24 17 14 22 14 19 21 0 33 25 0 0</td>
</tr>
<tr>
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09 August 1979

Pastor Ronald E. Ruskjer
RR #3
Hope British Columbia
VOX 1LO

Dear Ron:

I just received from Sandra a copy of your dissertation proposal. I have looked it over and it appears that you have done an extensive literature review and a thorough analysis of what you plan to undertake. I think your 20 health components from an Adventist point of view are excellent. I do not have any specific suggestions but wish you success as you undertake research and analysis. I will be happy to keep informed and help as opportunity may come.

I am to give Philosophy of Health this coming week August 12 and 13, at the new Hope campgrounds. Perhaps we will have opportunity for visiting.

Sincerely,

Mervyn G. Harding, M.D.
Dean Emeritus

cu
Dear Pastor __________:

Thank you for your willingness to help in the Adventist Lifestyle Study. I appreciated talking with you the other night; and am, in this letter, furnishing you with certain details relative to our conversation.

In talking with the individuals selected to participate in the study, the following should be mentioned:

1. You are needed in a study currently underway here in British Columbia.

2. Your name was selected by a random method, from over 5,000 Seventh-day Adventists living in B.C., to be a part of a special study designed to help our Conference leaders (Administrators, Departmental Directors, and Pastors) meet the needs of church members in B.C.; needs in healthful living, family life, and so forth.

3. We need three hours (approximately) of your time, (date), (time), and (place) to fill in questionnaires regarding your personality and lifestyle, health habits, and so forth.

4. No names will be recorded in this study; so your answers will be completely private. The value of the study, you see, lies in "grouped responses," not in any one person's specific response.

5. You are a most important person in this study, representing a number of your fellow Adventists here in B.C.

6. If for any reason you are unable to meet this appointment, we would surely appreciate an opportunity to have your questionnaire responses at a later time; we trust, of course, that this will not be necessary in many cases as this would mean a considerable expenditure of both time and money. We will be meeting at the church.

7. The goal of the study is to help our church bear a more Christlike witness. We are grateful for your help in this landmark effort.

Thank you again, brother pastor, for your kind assistance.

Sincerely yours,

Ronald E. Ruskjer, Director
ADVENTIST HEALTH MINISTRIES

RER

"The flower fadeth, but the word of our God shall stand forever." Isa. 40:8.
Dear Pastor __________:

Good talking with you the other day regarding the Adventist Lifestyle Study. Your kind cooperation certainly makes this a team effort. I want you to know that I really appreciate your help.

I'm enclosing the letters to be signed and sent on to the various individuals from your church selected for inclusion in the study. If you feel that one or two might better be hand-delivered, or perhaps not delivered at all—as might be the case should someone flatly refuse to participate and not want to be pressed further—feel free to use your own discretion.

So far we've had excellent cooperation from both pastors and church members. The Lord has given us good people here in B.C.

Once these letters are out, the only other thing we can do to insure solid participation is give these folks a brief reminder call, perhaps the night before the data gathering. Just a half-minute call is all you'll need here to jog their memories. Brevity, I know, will be important to you with your pastoral responsibilities weighing on you. We pray you heaven's blessings in your important work there.

Again, I'm grateful for your help, (name); and trust that the use made of this study's results will be helpful in speeding our Lord's return.

Your friend,

Ron Ruskjer

RR/enclosures

"The flower faileth; but the word of our God shall stand forever." Isa. 40:8.
(Date)

(Participant's name)
(Address)
(Town and code)

Dear __________:

Your participation is needed in an important research project being conducted in British Columbia by our department of Adventist Health Ministries. From thousands of B.C. Seventh-day Adventists your name has been selected, by a random method, to be a part of the special study group of 325. Questionnaires have been prepared which will evaluate the health habits, motivations, and personalities of Adventists in an effort to determine the real needs of our people here. This evaluation is considered by many church leaders to be a project of far-reaching significance. Results of the study will be used as the basis for designing helpful and practical health and family life programs in our conference.

At (time, day, month, date) at the (name) S.D.A. church, we would like your candid response to questions regarding your lifestyle. All information will be taken on an anonymous basis. There is no place on any questionnaire for your name to appear since the value of this study lies in grouped responses. Most will be able to easily complete the questionnaires in less than three hours. You will find this both an interesting and challenging experience. For a valid study, we need completed questionnaires from each person selected, regardless of his or her lifestyle practices or current relationship with the church. Upon its completion, all B.C. Adventists will be furnished with summary highlights of the study.

If for any reason your schedule will not permit you to meet this appointment, we would surely appreciate an opportunity to have your questionnaire responses at a later time. We trust, of course, that this will not be necessary in most cases as this would mean considerable expenditure of both time and money. If, however, you find it impossible to meet with us, please call collect, 869-2105 or 869-2512, to make arrangements for another appointment.

"The flower faileth; but the word of our God shall stand forever." Isa. 40:8.
You have willingly given of yourself in the past. And we have every confidence that with your help, the results of this present study will be meaningful toward the formulation of an effective health and family enrichment program in British Columbia; one in which we can move forward with confidence.

Yours sincerely,

Ronald E. Ruskjer, Director
ADVENTIST HEALTH MINISTRIES

__________________, Pastor
__________________ Seventh-day Adventist Church

RER
Dear Pastor 

Please accept my thanks for your helpful and able assistance in the health and family life study currently underway here in British Columbia.

We are now "over the hump" with more than half of the random sample having now responded to the questionnaires. We are making contact with those individuals who have not yet been able to complete the questionnaires and are inviting them to do so during this year's campmeeting.

Because we are handling things this way, it will not be necessary for you brethren to contact these folk at this time.

Following campmeeting I will be in touch with those who are unable to be with us for this data gathering event to make arrangements for them to complete the questionnaires at still another time.

I consider you brethren to be fellow researchers in this effort to determine needs of our people along lines of health and family life ministry. Offering a prayer that God will give you and your family, as well as your precious flock, the warmth of His Spirit and the joy of His presence during this campmeeting season, I remain, yours in His service.

Sincerely,

Ron Ruskjer, Director 
ADVENTIST HEALTH MINISTRIES

"The flower faileth, but the word of our God shall stand forever." Isa. 40:8.
Dear __________:

I appreciate you taking time to talk with me on the phone the other day about our "Adventist Lifestyle Study."

To refresh you briefly on the purpose of this study — through prayer, study, and careful research we are endeavoring to design practical, Christ-centered health and family life programs for our people in British Columbia.

In an undertaking of this nature, of course, we need candid, honest answers. In order to get such answers we are requesting that each person in the study NOT put his or her name on any of the questionnaires.

You will notice that your questionnaires are numbered; these numbers, however, are not associated with your name. They are simply to help us keep the responses on your three questionnaires from getting mixed up with someone else's.

Each participant, then, is responding anonymously. We can do this because the final results of our research will be tabulated by looking at all of the data together — the value of the study lying in grouped responses.

Though intended for a vital religious purpose, please understand that this phase of the study — the information gathering phase — is not meant, of itself, to be a rich spiritual experience; rather, it is meant to help your conference leaders better understand our membership as a whole, in order that they might then be able to more effectively lead God's people in the final proclamation of the third angel's message. Our thought is this: if the health and family life experience of our people is strong, then we can better be about the task of joyfully witnessing for our Lord, thereby hastening His return.

Please be assured that your response to every question is significant. You
are one of only 325 Seventh-day Adventists selected by a random method to represent thousands of your fellow-believers here in B.C.

Please know too that though at times it may not seem so, the questionnaires have been selected with great care -- by a group of experienced Adventist ministers, Bible teachers, and dedicated laymen well versed in this kind of religious research. Much prayer has gone into this study, that it might be an instrument in God's hands. We solicit your prayers as well.

And now, what are we asking you to do? What kind of "self-monitoring" can make your part in this study a success?

First, we want you to know that you will be reflecting to us your personal opinions and attitudes. In this process, there are no "right" or "wrong" answers per se. People are different, and will answer the same questions in different ways. Completing the questionnaires, then, according to how YOU feel, rather than how you think you "ought" to feel, is very important.

We would suggest that you plan on about three hours to complete the questionnaires. Some will write a bit faster and others somewhat slower. The writing must be done in a reasonably quiet place, free from the interruptions of telephone, noisy doors, and the various requests of children and others. Be SURE you are seated comfortably, that you have adequate lighting, and that you are wearing your eyeglasses, if you, like me, are a person who needs such.

You will notice in the packet a pencil, (You'll need to use this pencil since the machine which scores the questionnaires is unable to "read" other kinds), a large addressed and stamped envelope by means of which you can return your test booklets and answer sheets (we would like these -- you've probably guessed -- as soon as possible, within, say two or three days perhaps), a green test booklet entitled "MAT" together with a green MAT Answer Sheet, a yellow piece entitled "ALQ, Adventist Lifestyle Questionnaire," and finally, a "Statement of Completion" together with a small addressed and stamped envelope for returning it; this will let us know that you've gotten all of YOUR questionnaires and answer sheets, and the pencil -- unless you happen to need one -- back to us. Once we get YOUR materials, we won't have to get in touch with you again until the study is over, at which time we'll let you know what summary highlights of the entire project show.

Read CAREFULLY the directions which go with each section of the three questionnaires as they do vary one from another. Please complete the ALQ first, then the 16 P.F., and finally the MAT. Please place all of your answers for the ALQ on the ALQ itself. But for both the 16 PF and the MAT, do not write in the test booklets, but rather, record your answers on the matching answer sheets, (UNLESS the answer sheets are too difficult for you to relate to, in which case you may feel free to mark your answers right in the test booklets themselves). Please record your age on both the 16 PF and the MAT answer sheets as well as on the ALQ.

There is only one "timed" section, and that is on page eleven of the MAT test booklet. This is subtest 3, entitled "PAIRED WORDS." You will, of
course, be completing ALL FOUR subtests of the MAT, but the only one that is timed is subtest 3, Paired Words. Try not to take more than THREE SECONDS or so for each answer. This is important. Your first reaction is what's needed here. On the rest of the questionnaire, and on the other two questionnaires, the 16 PF and the ALQ, move along rapidly, but don't feel overly rushed.

BE SURE AND LEAVE NO QUESTION BLANK. If you don't know what to put, JUST GUESS. With some of the questions, none of the answers shown would be right for you. In these few cases, please pick the answer you would choose if you were put in a position where you HAD to make a choice. These tests are constructed in such a way that one or two responses, even in a questionnable direction, will not critically affect the final outcome. Even so, we NEED YOUR RESPONSE to EVERY question.

One other thing should be mentioned. In order for us to have a valid study, we need completed questionnaires from each person selected, regardless of his or her lifestyle practices or current relationship with the church. Please know that your contribution is most important and most appreciated.

Should you have any questions of any kind relative to the questionnaires themselves, the answer sheets, or how you are to fill in or return the questionnaires — or any question regarding the study in general, please call me collect at either my office 869-2105, or my home 869-2512, and I shall be happy to talk with you.

May the Lord bless you and yours with health, family warmth, and personal peace is my prayer.

Yours in Jesus,

Elder R. E. Ruskjer, Director
ADVENTIST HEALTH MINISTRIES

RER:j

Enclosures
August 1979

Dear Friend:

In order for us to know who has and who hasn't yet completed the questionnaires, we are asking that you please sign and return the following Statement of Completion, using the small enclosed, addressed, and stamped envelope.

You will notice that this is to be sent to us in an envelope separate from the one used for the return of the questionnaires and answer sheets themselves. We're doing it this way in order to insure that you are in no way identified with your answers. This, of course, is designed to encourage each person completing the questionnaires to be completely open and straightforward in their responses.

Looking, then, for your input; and thanking you for the part you are playing in this signal effort, I remain

Yours sincerely,

Elder R. E. Ruskjer

RER

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STATEMENT OF COMPLETION

I do hereby affirm that in keeping with all instructions connected with this research effort I have personally completed the questionnaires -- ALQ, 16 PF, and MAT. Please know that I have now mailed the questionnaires and answer sheets to the director of ADVENTIST HEALTH MINISTRIES, and that the answers I have given are my own and were not suggested to me by another person.

Signed: ____________________________

Church in which membership is held: ____________________________
(Date)

(Participant's name)
(Address)
(Town and code)

Dear ____________:

This letter comes to you by way of an update on the Adventist Lifestyle Study you helped us with a little while ago.

First of all, you'll be pleased to know that all of the data has now been sent through the computers and is in process of being analyzed. As soon as summary highlights are ready we will be sharing them with you.

Let me just take this opportunity to once again thank you for your kind cooperation in this research effort. Your contribution is truly appreciated.

Please pray for us now as we interpret the findings, that this study might be used of God to hasten the day when our Lord can return.

Yours sincerely,

Elder Ronald E. Ruskjer, Director
ADVENTIST HEALTH MINISTRIES

RER

"The flower fadeth; but the word of our God shall stand forever." Isa. 40:8.
APPENDIX F

DATA GATHERING SITES
BIBLIOGRAPHY
SELECTED BIBLIOGRAPHY

The Adventist Health Study. Loma Linda, California: School of Health, Loma Linda University, 1978.


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______. In den Fussspuren des grossen Arztes [In the Steps of the Great Physician]. Hamburg, Germany: Advent Verlag, 1926.


VITA

Name: Ronald Edwin Ruskjer

Date of birth: July 27, 1949

Place of birth: Lawrence, Michigan

Secondary Education: Battle Creek Academy, 1963-1967

Collegiate institutions attended: Dates Degree

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Concentration: Religious education

Cognate: Religious studies

Supporting fields:

- Health education
- Educational research

Positions held:

- Pastor and health educator
  - Michigan Conference of Seventh-day Adventists
  - 1974-1977
- Director: Adventist Health and Family Life Ministries
  - British Columbia Conference of Seventh-day Adventists
  - Appointed January 1978

Professional affiliations:

- American Public Health Association
- Canadian Public Health Association
- Phi Delta Kappa
- Public Health Association of Seventh-day Adventists
- Society for Public Health Education