2. QUALITY OF LIFE INTERVIEW

The objective of this study is to evaluate the Strong Heart Study participant's day-to-day functioning and well-being. The significance of this study can be summarized as following:

1. That there are needs and interests of obtaining data in regard to the quality of life in a population with a great burden of chronic conditions\textsuperscript{1,2,3,4,5}, and there is virtually no information about the quality of life in the Indian population.

2. With the amount of data that Strong Heart Study has collected, such as information about heart disease, hypertension and its treatment, diabetes and its control, use of medications, echocardiogram, pulmonary function, gallbladder, dietary intake, and various lab measurements, the potential use of the quality of life data is tremendous.

3. Through data linkage, the information collected from this study can be linked to the IHS database, thus providing the opportunity to study the quality of medical care outcomes.

4. The Strong Heart Study may be the first large-scale epidemiologic study, not only in the American Indian population, but also in the general population, which includes about 40\% of healthy subjects to assess the quality of life and provides invaluable baseline data for other or future studies to compare with\textsuperscript{14}.

The potential contribution of the study of the quality of life may become one of the most interesting and important findings to the Indian community, its health providers, and health policy makers.

The Medical Outcome Study (MOS) 36-ITEM SHORT-FORM HEALTH SURVEY (MOS SF-36, appendix 5) questionnaire will be used in this study to collect the data. Originally the questionnaire was developed by the RAND Corporation for the Medical Outcome Study (MOS), and later being condensed and standardized by Ware and Sherbourne (1992). The MOS SF-36 contains 36 questions which covers eight areas, physical functioning, role limitations due to physical problems, social functioning, bodily pain, general mental health, role limitation due to emotional problems, vitality, and general health perception. It was designed as self-administer questionnaire, and should not take more than five minutes to complete. If scoring slightly differently, the results can be compared with data collected by the RAND 36-ITEM HEALTH SURVEY 1.0.

The reasons the Rand 36-item Health Survey 1.0 was chosen as the tool to collect the data are based on the following reasons.

1. It is a generic (nondisease-specific), multi-item scale measuring each of eight health concepts: 1) physical functioning; 2) role limitations because of physical health problems;
3) bodily pains; 4) social functioning; 5) general mental health (psychological distress and psychological well-being); 6) role limitation because of emotional problems; 7) vitality (energy/fatigue); and 8) general health perceptions. Most of these items have been adapted from instruments that have been used for 20 to 40 years or longer, and all the items have been validated by various groups.

2. The form is designed for self-administration, telephone administration, or administration by personal interview. It has been applied to general public; participants who attended primary care facilities; elderly low-income veterans; patients with diabetes; and patients who received hip replacement. The age of participants ranged from 16 to over 80 years old. The response rates were about 85% in two of the studies administered by mailing the questionnaire to the participants, and over 95% of the respondents completed the questionnaire in one of the studies. The average time to administer the questionnaire was 15 minutes for elderly veterans, while it took about 5 to 10 minutes for younger participants. The questionnaire also has the precision to detect the difference of health status due to the different levels of severity of chronic medical conditions, due to the control of disease, or due to the treatment of medical conditions.

3. The scoring system of the questionnaire is straightforward. All measures were scored on a scale of 0 to 100, with a higher score indicating a more favorable health status. First, assign this numeric score to each of the questions according to the answer chosen by the participant. This score, between 0 and 100, represents the percentage of the total possible score achieved. Second, items in the same scale (i.e., each of the eight health concepts) are averaged together to create the scale scores; thus, eight scale scores will be created. Since the scores are treated as continuous variables, most of the parametric statistical methods can be used for data analysis. The eight scales can be analyzed individually or combined into different categories, depending on the purpose of the studies.

References


5. Guyatt GH, Feeny DH, and Patrick DL. Measuring health-related quality of life. Ann...


THE STRONG HEART STUDY II

Quality of Life

ID Number: 
Social Security Number: 

How is this questionnaire administered? (1=By interviewer, 2=By self, 3=Refused) 

1. In general, would you say your health is: 

   (Circle One Number) 
   Excellent ................... 1 
   Very good .................. 2 
   Good ....................... 3 
   Fair ........................ 4 
   Poor ........................ 5 

2. Compared to one year ago, how would you rate your health in general now? 

   (Circle One Number) 
   Much better now than one year ago .................. 1 
   Somewhat better now than one year ago ............ 2 
   About the same ................................... 3 
   Somewhat worse now than one year ago ............ 4 
   Much worse now than one year ago ................ 5 

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much? 

<table>
<thead>
<tr>
<th></th>
<th>Yes, Limited a Lot</th>
<th>Yes, Limited a Little</th>
<th>No, Not Limited at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Lifting or carrying groceries</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Climbing several flights of stairs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Climbing one flight of stairs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Bending, kneeling, or stooping</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Questions adopted from the RAND 36-Item Health Survey 1.0.
9. Walking more than a mile ........................................ 1 2 3
10. Walking several blocks ........................................ 1 2 3
11. Walking one block ........................................ 1 2 3
12. Bathing or dressing yourself ........................................ 1 2 3

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

(Circle One Number on Each Line)

13. Cut down the amount of time you spent on work or other activities........................................ 1 2
14. Accomplished less than you would like ........................................ 1 2
15. Were limited in the kind of work or other activities ........................................ 1 2
16. Had difficulty performing the work or other activities (for example, it took extra effort)........................................ 1 2

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

(Circle One Number on Each Line)

17. Cut down the amount of time you spent on work or other activities ........................................ 1 2
18. Accomplished less than you would like ........................................ 1 2
19. Didn't do work or other activities as carefully as usual ........................................ 1 2
20. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

(Circle One Number)
Not at all....................... 1
Slightly ....................... 2
Moderately ................. 3
Quite a bit...................... 4
Extremely ................... 5

Quality of Life
21. How much bodily pain have you had during the past 4 weeks?

(Circle One Number)
None......................... 1
Very mild................... 2
Mild ......................... 3
Moderate.................... 4
Severe....................... 5
Very severe............... 6

22. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

(Circle One Number)
Not at all .................... 1
A little bit ................... 2
Moderately .................. 3
Quite a bit ................... 4
Extremely................... 5

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks .... (Circle One Number on Each Line)

<table>
<thead>
<tr>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
</table>
23. Did you feel full of pep? ........................ 1 | 2 | 3 | 4 | 5 | 6 |
24. Have you been a very nervous person? .... 1 | 2 | 3 | 4 | 5 | 6 |
25. Have you felt so down in the dumps that nothing could cheer you up? ........................ 1 | 2 | 3 | 4 | 5 | 6 |
26. Have you felt calm and peaceful? ............ 1 | 2 | 3 | 4 | 5 | 6 |
27. Did you have a lot of energy?.................. 1 | 2 | 3 | 4 | 5 | 6 |
28. Have you felt downhearted and blue? ...... 1 | 2 | 3 | 4 | 5 | 6 |
29. Did you feel worn out? ......................... 1 | 2 | 3 | 4 | 5 | 6 |
30. Have you been a happy person? .............. 1 | 2 | 3 | 4 | 5 | 6 |
31. Did you feel tired?.............................. 1 | 2 | 3 | 4 | 5 | 6 |
32. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

(Circle One Number)
- All of the time.............. 1
- Most of the time ............ 2
- Some of the time............. 3
- A little of the time.......... 4
- None of the time............. 5

How TRUE or FALSE is **each** of the following statements for you?

(Circle One Number on Each Line)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don’t Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. I seem to get sick a little easier than other people..................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. I am as healthy as anybody I know.....................................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. I expect my health to get worse.........................................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. My health is excellent....................................................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

37. Interviewer’s code

38. Date (mo/day/yr)
INSTRUCTIONS FOR USING RAND 36-ITEM HEALTH SURVEY 1.0

Interviewer should stress that “This part of the study is to determine YOUR FEELINGS ABOUT YOUR HEALTH. Your answers should be based on YOUR point of view. Try your best to answer ALL of the questions. If you really cannot decide what your answer is, just leave it blank and go to the next question. The importance of this study is that your feeling about your health can help us to find out how those feelings affect your other conditions, such as heart disease, high blood pressure, diabetes, and so on”. After this opening introduction, ask the participant whether he/she want to answer the questionnaire himself/herself (self-administered) or have the questionnaire read to him/her (interviewer administered).

Tell participant if he/she has any trouble understanding any of the questions, don’t hesitate to ask our staff for help. After completion of the questionnaire, thanks participant for participating in the Strong Heart Quality of Life Study.

Following are some examples of most often encountered problems in answering this questionnaire.

Q3 & Q4. **Vigorous activities.** Leisure: swimming, canoeing. Occupational: heavy construction, heavy farming - hoeing, digging, or mowing, chopping (ax), digging ditches, shoveling, sawing woods, hauling water, or any heavy industrial work. **Moderate activities.** Walking, gardening, or ordinary household works. If participant asked about Indian dance, it should be decided by the pace of dancing. If it is fast paced (war dance or fancy dance), it would be vigorous. If is is slow paced, it would be moderate.

Q6 & Q7. **Climbing stairs.**
One flight is approximately walk up hill for 10 feet.
Several flights is approximately walk up hill for about 40-50 feet.

Q8. **Difficult in bending, kneeling, or stooping.**
The question meant ‘either one of the condition’, so that any of the three activities is limited by the current health status, the answer is “Yes, ...”.

Q10 & Q11. **Walking Blocks.** One block is approximately 100 yards, or the length of one football field, or the length of three and half basketball court. Several blocks is approximately equal to half a mile (using British version of the SF-36).

Q23-Q31 How to choose an answer among “Most of the Time, A Good Bit of the Time, Some of the Time, A Little of the Time”.
A little of the time: rarely, scarcely, seldom.
Some of the time: occasional, sometimes.
A good bit of the time: often, usually, frequently.
Most of the time: almost always.
3. STUDIES OF PSYCHOSOCIAL FACTORS

3.1 Rationale

There are vast amount of interest about the relationship between psychosocial and cultural attributes and the occurrence of cardiovascular disease. Since the Strong Heart population suffers a large burden of chronic conditions and facing rapid cultural changes, the Study provides a rare opportunity to explore these associations. In addition to life style, household income, education, and dietary intake, the Steering Committee decide to use standardized questionnaires to assess the level of acculturation, depression, interpersonal support, anger expression, and hostility in the Phase II examination. Due to the unfamiliarity and the difficulty to comprehend of these psychosocial questions in the Strong Heart Study communities, and, consequently, the unwillingness to answer the questionnaires, Arizona Center, which had the strongest opposition, decided not to participate this part of the study at all. Oklahoma and Dakotas would try on 200 participant to find out the community acceptance of these questionnaires. However, the Indian Health Services Institutional Review Board disapprove the use of these psychosocial questionnaires in the Strong Heart Study communities, this part of the study discontinued in Oklahoma and Dakotas promptly. Following is a sample of the introduction which will be read to the participant in explanation of why the Study needs these information and how the participant answer the questions.

3.2 A Sample of Introduction to the Participants

In the first phase of the Strong Heart Study, we assessed your health and health-related behavior that are known to be related to heart disease. It is also known that the interaction between our mind and body has an effect on our health.

In this current phase of the Strong Heart Study we want to study how stress and emotions may be related to heart disease. We have developed a questionnaire that we would like for you to complete to help us assess these factors.

This part of the study is voluntary just like other parts of the study. Your participation will help us to better understand the causes of heart disease in American Indians, and will shed light on the path to good health.

The questionnaire will show you your choices of answers for each question. Just write down the number for your answer. There are no right nor wrong answers, so please answer as best and as honestly as you can. Some of the questions may seem similar to you, but it is important that you answer each one as they have different meaning in our study. Please try to complete all questions, but if you have any question, please ask a Strong Heart Study staff member.
We want to remind you that all of this information is confidential. Your name will not be written on these forms, and personal answers will not be identified, only the group results will be considered.

You can read and complete the questionnaire by yourself, or a Strong Heart Study staff member can complete the questionnaire with you. Please let us know which way you prefer.

Thank you for your participation.

3.3 Cultural factors questionnaire


Questions from: *Denver Indian Social Health Survey*. Denver Indian Health and Family Services, Denver, CO.
THE STRONG HEART STUDY II
CULTURAL FACTORS QUESTIONNAIRE

ID Number

Social Security Number

1. How is this questionnaire administered?
   1 = By interviewer  
   2 = By self  
   3 = Refused

The next several questions are about your own native lifestyle.

2. How much do you identify yourself with your own native culture?
   1 = Not At All  
   2 = A Little  
   3 = Some  
   4 = A Lot

3. How much do you identify yourself with non-Indian culture?
   1 = Not At All  
   2 = A Little  
   3 = Some  
   4 = A Lot

4. How comfortable do you feel in your own native culture?
   1 = Not At All  
   2 = A Little  
   3 = Some  
   4 = A Lot

5. How comfortable do you feel in the non-Indian culture?
   1 = Not At All  
   2 = A Little  
   3 = Some  
   4 = A Lot

6. Interviewer's code

7. Date completed (mo/day/yr)
3.4 Center for Epidemiological Studies Depression scale (CES-D)


Depression and Health A vast research literature exists establishing to varying extents the relationship between depression and health. Measurements of depression can be useful to assess the association of depressive symptoms with health risk behavior, prevalence and incidence of cardiovascular disease, and also to evaluate the effect of health status or CHD on mood states.

Assessment of Depression The CES-D was designed to measure current level of depressive symptomology, and especially depressive affect. The CES-D has been established as the "standard" for brief assessment of depression, i.e., in large scale epidemiological studies.

CES-D Utilized by Similar Studies The CES-D is the standard scale used in numerous large scale studies including the Honolulu Heart Program, the Inter-Tribal Heart Project (Menominee, Red Lake & White Earth), Cardia, and the Stanford Coronary Prevention Project.

Reliability and Validity The CES-D has been found to both adequate test-retest reliability, and internal consistency. The internal reliability (Cronbach's Alpha) of the CES-D is .89.

Administration Designed for self-administration, or interview format.

Scoring Twenty items are rated on a 4 point likert scale, ranging from "rarely, or not at all" scored as 1, to "most of the time" scored as 4. Four items are reversed when scored: #s 5, 9, 13, and 17 so that 1 and 2 scores are changed to 4 and 3 respectively (and vice versa). Item scores are then summed for a total depression score (the higher the score, the greater the depression). Item #21 is not a part of the CES-D scale, and so should be scored separately.

Score Interpretation Upon completion of the survey, a staff member will sum the item scores, taking into account the reverse scored items. If the total score of items # 1-20 is above the CES-D cutoff score for indication of depression, the staff member is to ask the participant if they are interested in a referral for follow-up. The staff member then notes in the chart that the verbal offer of a referral had been given to the participant.
THE STRONG HEART STUDY II

CES-D SCALE

ID Number

1. How is this questionnaire administered?
   1=By interviewer
   2=By self
   3=Refused

Here are some questions (Q2-Q22) about your feelings during the past week. For each of the following statements, please respond as to whether you felt that way: Rarely or Not At All, Some of the time, Often, or Most of the time.

   1 Rarely or Not At All (1-2 days)  2 Some (3-4 days)  3 Often (5-7 days)  4 Most of the Time  9 Not Applicable

During the past week . . .

2. I was bothered by things that don’t usually bother me.
3. I did not feel like eating; my appetite was poor.
4. I felt that I could not shake the blues even with help from my family or friends.
5. I felt that I was just as good as other people.
6. I had trouble keeping my mind on what I was doing.
7. I felt depressed.
8. I felt that everything I did was an effort.
9. I felt hopeful about the future.
10. I thought my life had been a failure.
11. I felt fearful.
12. My sleep was restless.
13. I was happy.
14. I talked less than usual.
15. I felt lonely.
For each of the following statements, please respond as to whether you felt that way: Rarely or Not At All, Some of the time, Often, or Most of the time.

1 Rarely or Not At All (1-2 days) 2 Some (3-4 days) 3 Often (5-7 days) 4 Most of the Time 9 Not Applicable

16. People were unfriendly.
17. I enjoyed life.
18. I had crying spells.
19. I felt sad.
20. I felt that people disliked me.
21. I felt like I couldn't do what I needed to do.

For Question 22, please use the following scale

1 Rarely or Not At All 2 Some 3 Often 4 Most of the Time 9 Not Applicable

22. I have felt depressed or sad in this past year.
23. Interviewer's code
24. Date completed (mo/day/yr)
3.5 The Interpersonal Support Evaluation List (ISEL)


Social Support & Health Evidence of an association between stress and cardiovascular disease and many other psychological and physiological disorders has steadily accumulated over the years. Much research has focused on the role of social support in moderating the life stress-health relationship. In this context, the term "social support" refers to the various resources provided by one's interpersonal ties. The moderating effect of support on stress is often called the "buffering hypothesis". This hypothesis suggests that high levels of social support protect one from stress-induced pathology, but social support level is relatively unimportant for those experiencing low levels of stress. High social support has also been associated with lower levels of depression and other psychological disorders, lower physical symptomology, and with greater success in achieving and maintaining changes in health risk behavior such as smoking cessation and weight control.

Measure of Perceived Social Support This general form of the ISEL was designed to assess the perceived availability of four separate functions of social support as well as providing an overall support measure. Three of the four subscales will be utilized in this current study. The "Tangible" subscale is intended to measure perceived availability of material aid; the "Appraisal" subscale, measures the perceived availability of someone to talk to about one's problems; and the "Belonging" subscale measures the perceived availability of people one can do things with (socialize). This instrument has been widely used with adult populations of all ages (Health Psychology, 7:75-109, 1988). The "Self-Support" subscale was derived from Rosenman's Self-Esteem Scale, and measures self esteem and self support.

ISEL Utilized by Similar Studies The Inter-Tribal Heart Project (Menominee, Red Lake, White Earth) and the Honolulu Heart Program have utilized the ISEL in a number of different studies. Results suggest that social support is associated with prevalence and incidence of cardiovascular and pulmonary disease, as well as total and cause-specific mortality, disease prognosis, the utilization of medical care, and depressive symptoms. These findings are consistent with an expanding literature on the role of social support for stress reduction, health promotion/disease prevention.

Reliability & Validity The data demonstrates that the ISEL is a reliable measure of social support and that its subscales evidence reasonable independence from one another. The internal reliability (Alpha Coefficient) of the total ISEL scale is .88-.90. ISEL subscales range
from .73-.81 for Tangible Support, .70-.82 for Appraisal, and .73-.78 for Belonging. The scale has good test-retest reliability, subscales ranging from .67-.84.

**Administration** This scale was designed for self-administration, or in interview format. Each item is to be answered on a 4 point likert scale where "Never True" is 0, "Rarely True" is 1, "Somewhat True" is 2, and "Definitely True" is 3.

**Scoring** The scale is scored so that a higher number (the more true) indicates more social support. Scoring must be reversed for several items so that a true response indicates support. Item reversals are: numbers 4, 9, and 14. When reversing items, 0 becomes 3, 1 becomes 2, 2 becomes 1, and 3 becomes 0.
THE STRONG HEART STUDY II
ISEL

ID Number

1. How is this questionnaire administered?
   1=By interviewer
   2=By self
   3=Refused

This scale is an assessment of social support, and is made up of a list of statements, which may or may not be true about you. For each statement (Q2-Q21), answer as to whether it is 'Never True', 'Rarely True', 'Somewhat True', or 'Definitely True' for you.

<table>
<thead>
<tr>
<th></th>
<th>Never True</th>
<th>Rarely True</th>
<th>Somewhat True</th>
<th>Definitely True</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>If I needed a quick emergency loan of $30, there is someone I could get it from.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>There is at least one person I know, whose advice I really trust.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>If I needed help around the house (that is, with cleaning or making small repairs), I would have a hard time finding someone to help me without pay.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>If I wanted to go play bingo, go to a potluck or pow wow, or some other activity, I could easily find someone to go with me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I have a positive attitude about myself.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>When I need suggestions for how to deal with a personal worry or problem I know there is someone I can talk to.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>There are several people that I regularly enjoy spending leisure time with.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>There is really no one I can talk to about money problems.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I have the confidence to do the things I want to do in my life.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>If I needed help in doing some errands, I could find someone to help me.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I am a person of at least equal worth as other people.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I know someone that I can talk with about my most private thoughts and feelings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>If I needed a ride early in the morning, I would have a hard time finding anyone to take me.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each statement, answer as to whether it is 'Never True', 'Rarely True', 'Somewhat True', or 'Definitely True' for you.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never True</td>
<td>Rarely True</td>
<td>Somewhat True</td>
<td>Definitely True</td>
</tr>
</tbody>
</table>

15. I often meet or talk with friends or members of my family. [ ]
16. I am basically a good person. [ ]
17. I often get invited to do things with others. [ ]
18. I feel satisfied with the help I get in doing tasks around the house, taking care of errands, and getting rides. [ ]
19. I feel satisfied with the amount of support I get with personal concerns. [ ]
20. I feel satisfied with how often I talk to, or get together with family and friends. [ ]
21. I feel satisfied with how I feel about myself. [ ]
22. Interviewer's code [ ]
23. Date completed (mo/day/yr) [ ]
3.6 Spielberger's anger expression scale (AX)


Anger & Incidence and Prevalence of CHD Mounting evidence implicates the "AHA!" Syndrome (the triad of Anger, Hostility, and Aggression) in the etiology and pathogenesis of essential hypertension and coronary heart disease. Anger is most often defined as the emotional state that consists of feelings of irritation, annoyance, fury and rage, and heightened activation or arousal of the autonomic nervous system. Although hostility involves angry feelings, conceptually it is considered to be the cognitive component with the connotation of negative or cynical attitudes as well as chronic anger. Aggression generally refers to the behavioral expression of this anger and hostility directed toward other persons or objects in the environment. Since the concept of anger subsumes phenomena that are both more fundamental and simpler than the phenomena of hostility and aggression, anger is at the core of the AHA! Syndrome.

Previous research produced findings in which individual differences in the direction of anger expression were found to be associated with elevated blood pressure and hypertension (Harburg et. al. 1973, 1979; and Gentry et. al., 1981, 1982), and a common personality trait of individuals who develop CHD. Dembroski et. al., (1984) found that high ratings of potential for hostility and "Anger-In" were significantly and positively correlated with angiographically documented severity of coronary artherosclerosis. Other research has replicated similar findings (Williams et. al., 1980).

Measure of Expression and Experience of Anger Originally, the Anger Expression Scale (AX) was designed to assess individual differences in anger expression as a personality trait, with the objective of investigating the role of anger in the etiology of heart disease. In assessing anger, the experience and expression of anger have to be separated. Anger feelings may be expressed in behavior, inhibited, or controlled in many ways. People differ in the extent to which they express their anger openly and in controlling their anger.

The AX scale provides an assessment of overall "Anger Expression" (total score); an "Anger-In" score, which refers to how often angry feelings are experienced but not expressed (suppressed anger); and an "Anger-Out" score, which refers to the extent that an individual engages in aggressive behaviors when motivated by angry feelings.

Anger Expression Scale used by Similar Studies The AX scale is considered to be one of the standard assessments of anger, and has been used in many studies, including
numerous prospective and cross-sectional studies of the roles of anger and hostility in CHD conducted by John Barefoot, et. al. at the Duke Medical Center. The Stanford Coronary Prevention Program has also used this scale extensively in both prospective and cross-sectional studies of the roles of anger and hostility in CHD.

**Reliability & Validity**  Internal consistency (Alpha Coefficient) of the 20 item AX Scale and the 8 item "Anger-In" and "Anger-Out" subscales ranged from .73 to .84, and were highest for the Anger-in subscale. Overall, has established good validity and reliability.

**Administration**  Can be self-administered, or in interview format.

**Scoring**  The AX scales yields three scores: An Anger Expression score based on all 20 items, and scores for the 8-item Anger-In and Anger-Out subscales. Some of the AX items are worded in a manner such that a high rating indicates that anger is frequently expressed. Other items are worded so that a high rating indicates that anger is experienced but not expressed.

In calculating the AX total score, the scoring weights for items on which high ratings indicate the expression of anger correspond to the direct score. For items on which high ratings indicate that anger is not expressed, the scoring weights are reversed, i.e., the scores for responses marked 1, 2, 3, or 4, are changed to 4, 3, 2, & 1 respectively. To obtain the AX-Total score, simply sum the weighted scores for all 20 items, making sure to take the direction of scoring into account. In calculating the AX-Total score, the 9 directly scored items and the 11 reversed items are:

- Directly scored items: 3, 5, 8, 10, 12, 14, 18, 20, 21
- Reversed scored items: 2, 4, 6, 7, 9, 11, 13, 15, 16, 17, 19

The Anger-In and Anger-Out scores are obtained by summing the weighted scores for the 8 items that comprise each subscale. The scoring weight for each item corresponds to the number circled on the answer sheet: all 8 items are scored directly in calculating the subscale scores. The items which comprise the AX subscales are:

- **Anger-In:** 4, 6, 7, 11, 13, 15, 16, 19
- **Anger-Out:** 3, 8, 10, 12, 14, 18, 20, 21

The range of possible scores on the AX-Total can vary from a minimum of 20 to a maximum of 80. The range of possible scores on the Anger-In and Anger-Out subscales can vary from a minimum of 8 to maximum of 32.
THE STRONG HEART STUDY II
SPIELBERGER - AX

ID Number

1. How is this questionnaire administered?
   1=By interviewer
   2=By self
   3=Refused

A number of statements which people have used to describe themselves when they feel angry or furious are given below (Q2-Q21). Please read each statement and then indicate how often you feel or act in the manner described when you are angry.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely or Never</td>
<td>Sometimes</td>
<td>Often or Always</td>
<td>Almost Always</td>
</tr>
</tbody>
</table>

When I feel angry . . .

2. I control my temper.
3. I express my anger.
4. I keep my feelings to myself.
5. I make threats I don't really mean to carry out.
6. I withdraw from people when I'm angry.
7. I give people "the silent treatment" when I'm angry.
8. I make hurtful remarks to others.
9. I keep my cool.
10. I do things like slam doors when I'm angry.
11. I boil inside, but I don't show it.
12. I argue with others.
13. I hold grudges that I don't tell anyone about.
14. I strike out (emotionally or physically) at whatever makes me angry.
Please read each statement and then indicate how often you feel or act in the manner described when you are **angry**.

<table>
<thead>
<tr>
<th></th>
<th>1 Rarely or Never</th>
<th>2 Sometimes</th>
<th>3 Often or Always</th>
<th>4 Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>I am more critical of (judge or find fault with) others than I let people know.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>16.</td>
<td>I get angrier than I usually admit.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>17.</td>
<td>I calm down faster than most other people.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>18.</td>
<td>I say mean things.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>19.</td>
<td>I am irritated (frustrated, annoyed) much more than people are aware of.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>20.</td>
<td>I lose my temper.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>21.</td>
<td>If someone bothers (frustrates, irritates) me, I am likely to tell him/her.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>22.</td>
<td>Interviewer’s code</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>23.</td>
<td>Date completed (mo/day/yr)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
Cook medley scale (HO)


Hostility and Coronary Heart Disease  Numerous prospective and cross-sectional studies have found an association between hostility and a number of health outcomes including Coronary Artery Disease, CHD events, Peripheral Artery Disease, cardio reactivity, hypertension, risk factor status, and premature mortality from all causes. Not all results are conclusive, but overall results suggest the importance of assessing the relationship between hostility and Cardiovascular Disease.

Assessment of Hostility  The original Cook-Medley Hostility Scale (Ho) is a 50-item subscale of the Minnesota Multiphasic Personality Inventory (MMPI), that measures cynical hostility.

The Strong Heart Study will be utilizing the brief 9-Item Cook Medley Hostility scale developed by Greenglass and Julkunen (1989). Specifically, this brief scale is a measure of cynical distrust. One item has been deleted, thus 8 items will be utilized in this scale.

Some problems associated with self-report methods of hostility include the participants' hesitation to admit to hostile patterns based on perception of social undesirability. Also, the Ho assesses hostile "content", rather than "process" which can best be measured by direct observation of verbal and non-verbal interactional styles. This latter form of assessment can be best achieved through a method called the "Structured Interview", which although is a more effective and accurate assessment of hostility, takes more time and requires more highly trained data collectors and scorers, thus often rendering it unfeasible to use in large scale epidemiological studies.

Cook-Medley Utilized in Similar Studies  Currently, the Ho scale is being utilized extensively in studies including Cardia, Inter-Tribal Heart Project, Duke Medical Center research, as well as numerous other research projects.
Research findings include: Williams, et. al., (1980): Ho scores were associated with angiographically documented CAD in a clinical population.

Shekelle, et. al. (1983): In a prospective study of Western Electric Workers, a 10 year incidence of major CHD events related to Ho scores even after statistically adjusting for effects of traditional risk factors. In the 20 year follow-up, Ho scores predicted all cause mortality.

Siegman, et. al. (1987): Found relationship between Ho scores and angiographically documented CAD in patients under 60 years of age, but not in those over age 60.

Barefoot et. al., (1983): Ho scores significantly predicted incidence of CHD over 20 year period in 255 physicians. Ho scores were also related to mortality from a variety of causes including heart disease and cancer, and all cause mortality.

Barefoot et. al., (1989): In a prospective study, Ho scores were related to CHD and all cause mortality. Those at one standard deviation above the mean had an estimated 5.4 times the risk of dying than those at one standard deviation below the mean. The shorter 3 subscale version of Ho was found to be more predictive and to have a 50% greater chi square than the full scale.

Reliability and Validity The Ho scale appears to be satisfactorily valid and reliable. The authors report internal consistency as estimated by analysis of variance, of .86, and test-retest correlation after 1 year was .85. The correlation between two ratings 4 years apart was .89.

Barefoot et al. (1983) obtained a 1 year test-retest correlation of r = .85, and Shekelle et al. (1983) reported a similar figure (r = .84) over 4 years. Thus, the Ho scale apparently assesses a very stable characteristic.

Administration Designed for self-administration, or interview format.

Scoring This 8 Item scale is to be answered True, False, or Don't Know (N/A if the participant is not willing to answer the question). The score on the scale is the total number of items marked true (indicating hostile direction).
THE STRONG HEART STUDY II
COOK MEDLEY

ID Number

1. How is this questionnaire administered?
   1=By interviewer
   2=By self
   3=Refused

These next questions (Q2-Q9) are about how you think about other people. Although we cannot really know what other people would think or do unless they tell us, we would like to know your opinion as to whether you think each of the following statements is "True" or "False".

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>False</td>
<td>True</td>
</tr>
</tbody>
</table>

2. No one cares much about what happens to me.
3. It is safer to trust nobody.
4. Most people would lie to get ahead.
5. Most people inwardly dislike putting themselves out to help other people.
6. Most people will use unfair means to gain an advantage rather than lose it.
7. Most people are honest mainly through fear of being caught.
8. I often wonder what hidden reason another person may have for doing something nice for me.
9. Most people make friends because friends are likely to be useful to them.
10. Interviewer’s code
11. Date completed (mo/day/yr)
3.8 Risk factor knowledge items


Previous studies have focused on the relationship between knowledge and perceptions of health, and health risk behavior. Results suggest that an individual's perception of related risk may influence whether or not they will adopt self-protective behaviors. These findings highlight the importance of assessing the relationship between individual and group knowledge of health-related risk factors and heart disease. Although knowledge of risk factors does not necessarily motivate an individual or group to modify their health-related behaviors, it does increase the likelihood. This evaluation can be useful in guiding individual and group health promotion and disease prevention programs for the modification of risk factors.

Item numbers 1-8 were developed for the National Health Interview Survey (1985). They are also being used in the Inter-Tribal Heart Project. In addition, item number 9 was added to assess knowledge of sedentary lifestyle as risk factor.
**THE STRONG HEART STUDY II**

**RISK FACTOR KNOWLEDGE QUESTIONS**

<table>
<thead>
<tr>
<th>ID Number</th>
</tr>
</thead>
</table>

1. How is this questionnaire administered?
   1=By interviewer
   2=By self
   3=Refused

*This is a list of things which may or may not affect a person’s chances of getting heart disease. After you read each one, answer as to how much you think it affects a person’s chances of getting heart disease.*

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does Not Increase Risk</td>
<td>Increases Risk</td>
<td>Don’t Know /Not Sure</td>
</tr>
</tbody>
</table>

2. Cigarette Smoking?
3. High Cholesterol?
4. High Blood Pressure?
5. Diabetes?
6. Worry, Anxiety, or Stress?
7. Being very overweight?
8. Eating a diet high in animal fat?
   (For example, foods that contain red meat, cheese, butter, lard, etc.)
9. Family history of heart disease?
10. Not exercising regularly?
11. Interviewer’s code
12. Date completed (mo/day/yr)