

DOCUMENTATION OF SCALES
in
WISCONSIN LONGITUDINAL STUDY

1992-1993 Respondent Mail Questionnaire & Telephone Interview
1993-1994 Sibling Mail Questionnaire & Telephone Interview
2003-2005 Graduate Mail Questionnaire & Telephone Interview
2004-2007 Sibling Mail Questionnaire & Telephone Interview
2003-2005 Graduate Spouse Telephone Interview
2005 Sibling Spouse Telephone Interview



University of Wisconsin ♦ Center for Demography of Health and Aging
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Introduction

This document provides information about the scales constructed from data collected from 1992 to 2007 in the Wisconsin Longitudinal Study (WLS).

Each scale entry contains:

- scale name and summary variable
- number of subscales and subscale names (if any)
- variables that comprise the scale or subscales (with source variables or corresponding question number listed in parentheses following the variables)
- statements/questions that comprise the scale or subscales, as they were asked to WLS respondents
- coding information
- scaling details
- reliability coefficients (where applicable)
- original source of the scaled items
- selected publications using the scale and/or subscale(s) in the WLS.

Note that the number of valid cases pertaining to the reliability coefficient for each particular scale might differ from that of the summary score because each scale has its own specific rule¹ for assigning valid summary scores to cases while the reliability coefficients are all calculated based on listwise deletion.

Please send corrections, comments and suggestions to wls@ssc.wisc.

¹ For certain scales, a valid summary score was assigned to a respondent if more than half of the components of the scale received a valid response for that respondent.

Psychological Well-Being

1992-1993 Graduate Respondent Mail Questionnaire

Psychological Well-Being ($\alpha=.93$)

Subscales (n = 6)

1. Autonomy

MN001REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN003RER (19a), MN004RER (19g), MN005RER (19h), MN006RER (19o), MN007RER (19v), MN008RER (19cc), MN009RER (19jj)

Please read the statements below and decide the extent to which each statement describes you.

MN003RER. "My decisions are not usually influenced by what everyone else is doing."

MN004RER. "I have confidence in my opinions even if they are contrary to the general consensus."

MN005RER. "I tend to worry what other people think of me."

MN006RER. "I often change my mind about decisions if my friends or family disagree."

MN007RER. "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people."

MN008RER. "Being happy with myself is more important to me than having others approve of me."

MN009RER. "It is difficult for me to voice my opinions on controversial matters."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MN001REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN003RER, MN004RER, MN007RER and MN008RER were reverse coded in the creation of this variable.

Note: This variable was constructed based on questions scn3, 19, 19a, 19g, 19h, 19o, 19v, 19cc and 19jj.

Reliability: $\alpha = .70$

MN001REI: an imputed version of MN001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN002RE: number of autonomy items answered
= 0 if no autonomy items answered
= 1-7 if one to seven items answered

2. Environmental Mastery

MN010REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN012RER (19b), MN013RER (19i), MN014RER (19n), MN015RER (19p), MN016RER (19w), MN017RER (19dd), MN018RER (19kk)

Please read the statements below and decide the extent to which each statement describes you.

MN012RER. "I am good at juggling my time so that I can fit everything in that needs to get done."

MN013RER. "I often feel overwhelmed by my responsibilities."

MN014RER. "I am quite good at managing the many responsibilities of my daily life."

MN015RER. "I do not fit very well with the people and community around me."

MN016RER. "I have difficulty arranging my life in a way that is satisfying to me."

MN017RER. "I have been able to create a lifestyle for myself that is much to my liking."

MN018RER. "I generally do a good job of taking care of my personal finances and affairs."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MN010REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN012RER, MN014RER, MN017RER and MN018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .74$

MN010REI: an imputed version of MN010REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN011RE: number of environmental mastery items answered
= 0 if no environmental mastery items answered
= 1-7 if one to seven items answered

3. Personal Growth

MN019REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN021RER (19c), MN022RER (19j), MN023RER (19q), MN024RER (19u), MN025RER (19x), MN026RER (19ee), MN027RER (19ll)

Please read the statements below and decide the extent to which each statement describes you.

MN021RER. "I am not interested in activities that will expand my horizons."

MN022RER. "I have the sense that I have developed a lot as a person over time."

MN023RER. "When I think about it, I haven't really improved much as a person over the years."

MN024RER. "I think it is important to have new experiences that challenge how I think about myself and the world."

MN025RER. "I don't want to try new ways of doing things – my life is fine the way it is."

MN026RER. "I do not enjoy being in new situations that require me to change my old familiar ways of doing things."

MN027RER. "There is truth to the saying you can't teach an old dog new tricks."

Psychological Well-Being
1992-1993 Graduate Respondent Mail Questionnaire

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MN019REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN022RER and MN024RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .77$

MN019REI: an imputed version of MN019REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN020RE: number of personal growth items answered
= 0 if no personal growth items answered
= 1-7 if one to seven items answered

4. Positive Relation with Others

MN028REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN030RER (19d), MN031RER (19k), MN032RER (19r), MN033RER (19y), MN034RER (19bb), MN035RER (19ff), MN036RER (19mm)

Please read the statements below and decide the extent to which each statement describes you.

- MN030RER. "I don't have many people who want to listen when I need to talk."
MN031RER. "I enjoy personal and mutual conversations with family members and friends."
MN032RER. "I often feel lonely because I have few close friends with whom to share my concerns."
MN033RER. "It seems to me that most other people have more friends than I do."
MN034RER. "People would describe me as a giving person, willing to share my time with others."
MN035RER. "Most people see me as loving and affectionate."
MN036RER. "I know I can trust my friends and they know they can trust me."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MN028REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN031RER, MN034RER, MN035RER and MN036RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .78$

MN028REI: an imputed version of MN028REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN029RE: number of positive relation to others items answered
= 0 if no positive relation to others items answered
= 1-7 if one to seven items answered

5. Purpose in Life

MN037REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN039RER (19e), MN040RER (19l), MN041RER (19s), MN042RER (19z), MN043RER (19gg), MN044RER (19ii), MN045RER (19nn)

Please read the statements below and decide the extent to which each statement describes you.

MN039RER. "I enjoy making plans for the future and working to make them a reality."

MN040RER. "My daily activities often seem trivial and unimportant to me."

MN041RER. "I am an active person in carrying out the plans I set for myself."

MN042RER. "I tend to focus on the present because the future nearly always brings me problems."

MN043RER. "I don't have a good sense of what it is I'm trying to accomplish in life."

MN044RER. "I sometimes feel as if I've done all there is to do in life."

MN045RER. "I used to set goals for myself but that now seems like a waste."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MN037REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN039RER and MN041RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .79$

MN037REI: an imputed version of MN037REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN038RE: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1-7 if one to seven items answered

6. Self-Acceptance

MN046REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN048RER (19f), MN049RER (19m), MN050RER (19t), MN051RER (19aa), MN052RER (19hh), MN053RER (19oo), MN054RER (19pp)

Please read the statements below and decide the extent to which each statement describes you.

MN048RER. "I feel like many of the people I know have gotten more out of life than I have."

MN049RER. "In general, I feel confident and positive about myself."

MN050RER. "When I compare myself to friends and acquaintances, it makes me feel good about who I am."

MN051RER. "My attitude about myself is probably not as positive as most people feel about themselves."

MN052RER. "I made some mistakes in the past, but I feel that all in all everything has worked out for the best."

MN053RER. "The past had its ups and down, but in general, I wouldn't want to change it."

MN054RER. "In many ways, I feel disappointed about my achievements in life."

Psychological Well-Being
1992-1993 Graduate Respondent Mail Questionnaire

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused

Scaling: MN046REC was constructed by summing the valid values across the seven items if at least one item received a valid response. Items MN049RER, MN050RER, MN052RER and MN053RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .80$

MN046REI: an imputed version of MN046REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

MN047RE: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1-7 if one to seven items answered

1992-1993 Graduate Respondent Telephone Interview

Psychological Well-Being ($\alpha=.61$)

Subscales (n = 6)

*These questions were administered to test for mode effects in the measurement of Psychological Well-Being (PWB). Research using these measures demonstrates that self-administered instruments provide more valid psychological measurements than telephone surveys. We strongly encourage WLS researchers to use the PWB measures based on the mail survey. Please see: Springer, Kristen W., Hauser, Robert M.. 2006. "An Assessment of the Construct Validity of Ryff's Scales of Psychological Well-Being: Method, Mode, and Measurement Effects." *Social Science Research* 35:1119-1130.*

An 80% random sample was selected to be asked psychological well-being questions in the 1992-3 Graduate Respondent Telephone Interview. If RN001RE = 0, the respondent was not in this 80% sample; if RN001RE = 1, the respondent was in the 80% sample.

1. Autonomy

RN002RED: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN016REC (RN001RE, 438s, 439), RN025REC (RN001RE, 490, 490b)

RN016REC: "I tend to be influenced by people with strong opinions."

RN025REC: "I judge myself by what I think is important, not by what others think is important."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN002RED was constructed by summing the valid values across both items. RN025REC was reverse coded in the creation of this variable. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN016REC is a constructed variable based on questions RN001RE, 438s and 439. RN025REC is a constructed variable based on questions RN001RE, 490 and 490b.

Reliability: $\alpha = .22$

RN003RED: number of autonomy items answered
= 0 if no autonomy items answered
= 1 if one autonomy item answered
= 2 if two autonomy items answered
= -2 if inappropriate (RN001RE = 0)

2. Environmental Mastery

RN004RED: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN017REC (RN001RE, 440, 440b), RN021REC (RN001RE, 442m, 442p)

RN017REC. "In general, I feel I am in charge of the situation in which I live."
RN021REC. "The demands of everyday life often get me down."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN004RED was constructed by summing the valid values across both items. RN017REC was reverse coded in the creation of this variable. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN017REC is a constructed variable based on questions RN001RE, 440 and 440b. RN021REC is a constructed variable based on questions RN001RE, 442m and 442p.

Reliability: $\alpha = .33$

RN005RED: number of environmental mastery items answered
= 0 if no environmental mastery items answered
= 1 if one environmental mastery item answered
= 2 if two environmental mastery items answered

= -2 if inappropriate (RN001RE = 0)

3. Personal Growth

RN006RED: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN022REC (RN001RE, 442s, 443), RN026REC (RN001RE, 490m, 490p)

RN022REC. "For me, life has been a continuous process of learning, changing, and growing."

RN026REC. "I gave up trying to make big improvements or changes in my life a long time ago."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN006RED was constructed by summing the valid values across both items. RN022REC was reverse coded in the creation of this variable. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN022REC is a constructed variable based on questions RN001RE, 442s and 443. RN026REC is a constructed variable based on questions RN001RE, 490m and 490p.

Reliability: $\alpha = .31$

RN007RED: number of personal growth items answered
= 0 if no personal growth items answered
= 1 if one personal growth item answered
= 2 if two personal growth items answered
= -2 if inappropriate (RN001RE = 0)

4. Positive Relation with Others

RN008RED: continuous variable based on 2 items

Psychological Well-Being
1992-1993 Graduate Respondent Telephone Interview

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN018REC (RN001RE, 440m, 440p), RN023REC (RN001RE, 488g, 488j)

RN018REC. “Maintaining close relationships has been difficult and frustrating for me.”

RN023REC. “I have not experienced many warm and trusting relationships with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN008RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN018REC is a constructed variable based on questions RN001RE, 440m and 440p. RN023REC is a constructed variable based on questions RN001RE, 488g and 488j.

Reliability: $\alpha = .56$

RN009RED: number of positive relations with others items answered
= 0 is no positive relations items answered
= 1 if one positive relations item answered
= 2 if two positive relations items answered
= -2 if inappropriate (RN001RE = 0)

5. Purpose in Life

RN010RED: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN019REC (RN001RE, 440s, 441), RN024REC (RN001RE, 488m, 488p)

RN019REC. “Some people wander aimlessly through life but I am not one of them.”

RN024REC. “I live life one day at a time and don't really think about the future.”

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Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN010RED was constructed by summing the valid values across both items. RN019REC was reverse coded in the creation of this variable. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN019REC is a constructed variable based on questions RN001RE, 440s and 441. RN024REC is a constructed variable based on questions RN001RE, 488m and 488p.

Reliability: $\alpha = .15$

RN011RED: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1 if one purpose in life item answered
= 2 if two purpose in life items answered
= -2 if inappropriate (RN001RE = 0)

6. Self-Acceptance

RN012RED: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN020REC (RN001RE, 442, 442b), RN027REC (RN001RE, 492f, 492j)

RN020REC. "When I look at the story of my life, I am pleased with how things have turned out."

RN027REC. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN012RED was constructed by summing the valid values across both items. Both items were reverse coded in the creation of this variable. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

Notes: RN020REC is a constructed variable based on questions RN001RE, 442 and 442b. RN027REC is a constructed variable based on questions RN001RE, 492f and 492j.

Reliability: $\alpha = .35$

RN013RED: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1 if one self-acceptance item answered
= 2 if two self-acceptance items answered
= -2 if inappropriate (RN001RE = 0)

7. Total Score for Psychological Well-Being

RN014RED: continuous variable based on 12 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RN016REC (RN001RE, 438s, 439), RN017REC (RN001RE, 440, 440b), RN018REC (RN001RE, 440m, 440p), RN019REC (RN001RE, 440s, 441), RN020REC (RN001RE, 442, 442b), RN021REC (RN001RE, 442m, 442p), RN022REC (RN001RE, 442s, 443), RN023REC (RN001RE, 488g, 488j), RN024REC (RN001RE, 488m, 488p), RN025REC (RN001RE, 490, 490b), RN026REC (RN001RE, 490m, 490p), RN027REC (RN001RE, 492f, 492j)

RN016REC. "I tend to be influenced by people with strong opinions."

RN017REC. "In general, I feel I am in charge of the situation in which I live.

RN018REC. "Maintaining close relationships has been difficult and frustrating for me."

RN019REC. "Some people wander aimlessly through life but I am not one of them."

RN020REC. "When I look at the story of my life, I am pleased with how things have turned out."

RN021REC. "The demands of everyday life often get me down."

RN022REC. "For me, life has been a continuous process of learning, changing, and growing."

RN023REC. "I have not experienced many warm and trusting relationships with others."

RN024REC. "I live life one day at a time and don't really think about the future."

RN025REC. "I judge myself by what I think is important, not by what others think is important."

Psychological Well-Being
1992-1993 Graduate Respondent Telephone Interview

RN026REC. "I gave up trying to make big improvements or changes in my life a long time ago."

RN027REC. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused/not ascertained.

Scaling: RN014RED was constructed by summing the valid values across the twelve items if at least one item received a valid response. RN017REC, RN019REC, RN020REC, RN022REC, RN025REC and RN027REC were reverse coded in the creation of this variable.

Reliability: $\alpha = .61$

Notes: RN016REC is a constructed variable based on questions RN001RE, 438s and 439. RN017REC is a constructed variable based on questions RN001RE, 440 and 440b. RN018REC is a constructed variable based on questions RN001RE, 440m and 440p. RN019REC is a constructed variable based on questions RN001RE, 440s and 441. RN020REC is a constructed variable based on questions RN001RE, 442 and 442b. RN021REC is a constructed variable based on questions RN001RE, 442m and 442p. RN022REC is a constructed variable based on questions RN001RE, 442s and 443. RN023REC is a constructed variable based on questions RN001RE, 488j and 488g. RN024REC is a constructed variable based on questions RN001RE, 488m and 488p. RN025REC is a constructed variable based on questions RN001RE, 490 and 490b. RN026REC is a constructed variable based on questions RN001RE, 490m and 490p. RN027REC is a constructed variable based on questions RN001RE, 492f and 492j.

RN014REI: an imputed version of RN014REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least six items received a valid response. The variable is coded -3 if there are fewer than six valid responses. If the respondent is not in the 80% random sample for psychological well-being (RN001RE = 0), the variable is coded -2.

RN015RED: total number of psychological well-being items answered
= 0 if no psychological well-being items answered
= 1-12 if one to twelve items answered
= -2 if inappropriate (RN001RE = 0)

2003-2005 Graduate Respondent Mail Questionnaire

Psychological Well-Being ($\alpha=.92$)

Subscales (n = 6)

1. Autonomy

IN001REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN004RER (q5va_m), IN007RER (q5va_s), IN009RER (q5va_y), IN101RER (q5va_a), IN107RER (q5va_g).

IN004RER. "I have confidence in my opinions even if they are contrary to the general consensus."

IN007RER. "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people."

IN009RER. "It is difficult for me to voice my opinions on controversial matters."

IN101RER. "I tend to be influenced by people with strong opinions."

IN107RER. "I judge myself by what I think is important, not by what others think is important."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 not ascertained/ refused.

Scaling: IN001REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IN004RER, IN007RER and IN107RER were reverse coded in the creation of this variable. This variable is coded - 2 if there is no valid response.

Reliability: $\alpha = .65$

IN001REI: an imputed version of IN001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN002RE: number of autonomy items answered
= 0 if no autonomy items answered

= 1-5 if one to five items answered

2. Environmental Mastery

IN010REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN014RER (q5va_n), IN016RER (q5va_t), IN017RER (q5va_z), IN102RER (q5va_b), IN108RER (q5va_h)

IN014RER. "I am quite good at managing the many responsibilities of my daily life."

IN016RER. "I have difficulty arranging my life in a way that is satisfying to me."

IN017RER. "I have been able to create a lifestyle for myself that is much to my liking."

IN102RER. "In general, I feel I am in charge of the situation in which I live."

IN108RER. "The demands of everyday life often get me down."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 not ascertained/ refused.

Scaling: IN010REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IN014RER, IN017RER and IN102RER were reverse coded in the creation of this variable. This variable is coded - 2 if there is no valid response.

Reliability: $\alpha = .75$

IN010REI: an imputed version of IN010REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN011RE: number of environmental mastery items answered

= 0 if no environmental mastery items answered

= 1-5 if one to five items answered

3. Personal Growth

IN019REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN022RER (q5va_u), IN023RER (q5va_aa), IN024RER (q5va_o), IN103RER (q5va_c), IN109RER (q5va_i)

IN022RER. "I have the sense that I have developed a lot as a person over time."

IN023RER. "When I think about it, I haven't really improved much as a person over the years."

IN024RER. "I think it is important to have new experiences that challenge how I think about myself and the world."

IN103RER. "For me, life has been a continuous process of learning, changing and growing."

IN109RER. "I gave up trying to make big improvements or changes in my life a long time ago."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 not ascertained/ refused.

Scaling: IN019REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IN022RER, IN024RER and IN103RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .74$

IN019REI: an imputed version of IN019REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN020RE: number of personal growth items answered
= 0 if no personal growth items answered
= 1-5 if one to five items answered

4. Positive Relation with Others

IN028REC: continuous variable based on 5 items

Psychological Well-Being
2003-2005 Graduate Respondent Mail Questionnaire

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN032RER (q5va_v), IN033RER (q5va_bb), IN034RER (q5va_p), IN104RER (q5va_d), IN110RER (q5va_j)

IN032RER. "I often feel lonely because I have few close friends with whom to share my concerns."

IN033RER. "It seems to me that most other people have more friends than I do."

IN034RER. "People would describe me as a giving person, willing to share my time with others."

IN104RER. "Maintaining close relationships has been difficult and frustrating for me."

IN110RER. "I have not experienced many warm and trusting relationships with others."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 not ascertained/ refused.

Scaling: IN028REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IN034RER was reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .80$

IN028REI: an imputed version of IN028REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN029RE: number of positive relation to others items answered
= 0 if no positive relation to others items answered
= 1-5 if one to five items answered

5. Purpose in Life

IN037REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN041RER (q5va_w), IN043RER (q5va_ee), IN044RER (q5va_q), IN045RER (q5va_cc), IN105RER (q5va_e), IN111RER (q5va_k)

IN041RER. "I am an active person in carrying out the plans I set for myself."

IN043RER. "I don't have a good sense of what it is I'm trying to accomplish in life."

IN044RER. "I sometimes feel as if I've done all there is to do in life."

IN045RER. "I used to set goals for myself but that now seems like a waste of time"

IN105RER. "I live life one day at a time and don't really think about the future."

IN111RER. "Some people wander aimlessly through life, but I am not one of them."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't Know; -3 not ascertained/ refused.

Scaling: IN037REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IN041RER and IN111RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .69$

IN037REI: an imputed version of IN037REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN038RE: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1-6 if one to six items answered

6. Self-Acceptance

IN046REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions In049RER (q5va_x), IN050RER (q5va_dd), IN054RER (q5va_r), IN106RER (q5va_f), IN112RER (q5va_l)

IN049RER. "In general, I feel confident and positive about myself."

IN050RER. "When I compare myself to friends and acquaintances, it makes me feel good about who I am."

Psychological Well-Being
2003-2005 Graduate Respondent Mail Questionnaire

IN054RER. "In many ways, I feel disappointed about my achievements in life."

IN106RER. "When I look at the story of my life, I am pleased with how things have turned out."

IN112RER. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 not ascertained/ refused

Scaling: IN046REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IN049RER, IN050RER, IN106RER and IN112RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .78$

IN046REI: an imputed version of IN046REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IN047RE: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1-5 if one to five items answered

2003-2005 Graduate Respondent Telephone Interview

Psychological Well-Being ($\alpha=.96$)

Subscales ($n = 6$)

An 80% random sample of replicate 3 (8% of the total sample) was selected to be asked psychological well-being questions in the 2003-5 Graduate respondent telephone interviews. If GN101RE = 0, the respondent was not in the sample; if GN101RE = 1, the respondent was in the sample.

1. Autonomy

GN102REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN116RE (GN101RE, n438s2), GN125RE (GN101RE, n490), GN128RE (GN101RE, n493a)

GN116RE. "I tend to be influenced by people with strong opinions."

GN125RE. "I judge myself by what I think is important, not by what others think is important."

GN128RE. "I have confidence in my opinions even if they are contrary to the general consensus."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (GN101RE = 0); -3 refused; -4 not ascertained.

Scaling: GN102REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN125RE and GN128RE were reverse coded in the creation of this variable.

Reliability: $\alpha = .76$

GN103REC: number of autonomy items answered
= 0 if no autonomy items answered
= 1-3 if one to three autonomy items answered
= -2 if inappropriate (GN101RE = 0)

2. Environmental Mastery

GN104REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN117RE (GN101RE, n440), GN121RE (GN101RE, n442m), GN129RE (GN101RE, n493b)

GN117RE. "In general, I feel I am in charge of the situation in which I live."

GN121RE. "The demands of everyday life often get me down."

GN129RE. "I'm quite good at managing the many responsibilities of my daily life."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (GN101RE = 0); -3 refused; -4 not ascertained.

Scaling: GN104REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN117RE and GN129RE were reverse coded in the creation of this variable.

Reliability: $\alpha = .80$

GN105REC: number of environmental mastery items answered
= 0 if no environmental mastery items answered
= 1-3 if one to three environmental mastery items answered
= -2 if inappropriate (GN101RE = 0)

3. Personal Growth

GN106REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN122RE (GN101RE, n442s), GN126RE (GN101RE, n490m), GN130RE (GN101RE, n493c)

GN122RE. "For me, life has been a continuous process of learning, changing, and growing."

GN126RE. "I gave up trying to make big improvements or changes in my life a long time ago."

GN130RE. "I think it is important to have new experiences that challenge how I think about myself and the world."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (GN001RE = 0); -3 refused; -4 not ascertained.

Scaling: GN106REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN122REC and GN130REC were reverse coded in the creation of this variable.

Reliability: $\alpha = .79$

GN107REC: number of personal growth items answered
= 0 if no personal growth items answered
= 1-3 if one to three personal growth items answered
= -2 if inappropriate (GN101RE = 0)

4. Positive Relation with Others

GN108REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN118RE (GN101RE, n440m), GN123RE (GN101RE, n488g), GN131RE (GN101RE, n493d)

GN118RE. "Maintaining close relationships has been difficult and frustrating for me."

GN123RE. "I have not experienced many warm and trusting relationships with others."

GN131RE. "People would describe me as a giving person, willing to share my time with others."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused; -4 not ascertained.

Scaling: GN108REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN131RE was reverse coded in the creation of this variable.

Reliability: $\alpha = .79$

GN109REC: number of positive relations with others items answered
= 0 is no positive relations items answered
= 1-3 if one to three positive relations items answered
= -2 if inappropriate (GN101RE = 0)

5. Purpose in Life

GN110REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN119RE (GN101RE, n440s), GN124RE (GN101RE, n488m), GN132RE (GN101RE, n493e)

GN119RE. "Some people wander aimlessly through life but I am not one of them."

GN124RE. "I live life one day at a time and don't really think about the future."

GN132RE. "I sometimes feel as if I've done all there is to do in life."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (GN101RE = 0); -3 refused; -4 not ascertained.

Scaling: GN110REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN119RE was reverse coded in the creation of this variable.

Reliability: $\alpha = .71$

GN111REC: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1-3 if one to three purpose in life items answered
= -2 if inappropriate (GN101RE = 0)

6. Self-Acceptance

GN112REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN120RE (GN101RE, n442), GN127RE (GN101RE, n492f), GN133RE (GN101RE, n493f)

GN120RE. "When I look at the story of my life, I am pleased with how things have turned out."

GN127RE. "I like most aspects of my personality."

GN133RE. "In many ways, I feel disappointed about my achievements in life."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (GN101RE = 0); -3 refused; 4 not ascertained.

Scaling: GN112REC was constructed by summing the valid values across the three items. If at least one of component items is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN120RE and GN127RE were reverse coded in the creation of this variable.

Reliability: $\alpha = .72$

GN113REC: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1-3 if one to three self-acceptance items answered
= -2 if inappropriate (RN001RE = 0)

7. Total Score for Psychological Well-Being

GN114REC: continuous variable based on 18 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GN116RE (GN101RE, n438s2), GN125RE (GN101RE, n490), GN128RE (GN101RE, n493a), GN117RE (GN101RE, n440), GN121RE (GN101RE, n442m), GN129RE (GN101RE, n493b), GN122RE (GN101RE, n442s), GN126RE (GN101RE, n490m), GN130RE (GN101RE, n493c), GN118RE (GN101RE, n440m), GN123RE (GN101RE, n488g), GN131RE (GN101RE, n493d), GN119RE (GN101RE, n440s), GN124RE (GN101RE, n488m), GN132RE (GN101RE, n493e), GN120RE (GN101RE, n442), GN127RE (GN101RE, n492f), GN133RE (GN101RE, n493f).

GN116RE. "I tend to be influenced by people with strong opinions."

GN125RE. "I judge myself by what I think is important, not by what others think is important."

GN128RE. "I have confidence in my opinions even if they are contrary to the general consensus."

GN117RE. "In general, I feel I am in charge of the situation in which I live."

GN121RE. "The demands of everyday life often get me down."

GN129RE. "I'm quite good at managing the many responsibilities of my daily life."

GN122RE. "For me, life has been a continuous process of learning, changing, and growing."

Psychological Well-Being
2003-2005 Graduate Respondent Telephone Interview

- GN126RE. "I gave up trying to make big improvements or changes in my life a long time ago."
- GN130RE. "I think it is important to have new experiences that challenge how I think about myself and the world."
- GN118RE. "Maintaining close relationships has been difficult and frustrating for me."
- GN123RE. "I have not experienced many warm and trusting relationships with others."
- GN131RE. "People would describe me as a giving person, willing to share my time with others."
- GN119RE. "Some people wander aimlessly through life but I am not one of them."
- GN124RE. "I live life one day at a time and don't really think about the future."
- GN132RE. "I sometimes feel as if I've done all there is to do in life."
- GN120RE. "When I look at the story of my life, I am pleased with how things have turned out."
- GN127RE. "I like most aspects of my personality."
- GN133RE. "In many ways, I feel disappointed about my achievements in life."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -2 inappropriate (RN001RE = 0); -3 refused; -4 not ascertained.

Scaling: GN114REC was constructed by summing the valid values across the eighteen items (or the six subscales). If at least one of the subscales is missing, the variable is coded as -2. If the respondent is not in the random sample for psychological well-being (GN101RE = 0), the variable is also coded -2. GN125RE, GN128RE, GN117RE, GN129RE, GN122RE, GN130RE, GN131RE, GN119re, GN120RE and GN127RE were reverse coded in the creation of this variable.

Reliability: $\alpha = .96$

GN115REC: total number of psychological well-being items answered
= 0 if no psychological well-being items answered
= 1-18 if one to eighteen items answered
= -2 if inappropriate (GN101RE = 0)

1993-1994 Sibling Respondent Mail Questionnaire

Psychological Well-Being ($\alpha=.93$)

Subscales (n = 6)

1. Autonomy

NP001REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP003RER (41a), NP004RER (41g), NP005RER (41h), NP006RER (41o), NP007RER (41v), NP008RER (41cc), NP009RER (41jj)

NP003RER. "My decisions are not usually influenced by what everyone else is doing."

NP004RER. "I have confidence in my opinions even if they are contrary to the general consensus."

NP005RER. "I tend to worry about what other people think of me."

NP006RER. "I often change my mind about decisions if friends or family disagree."

NP007RER. "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people."

NP008RER. "Being happy with myself is more important to me than having others approve of me."

NP009RER. "It's difficult for me to voice my opinions on controversial matters."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: NP001REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP003RER, NP004RER, NP007RER and NP008RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .71$

NP001REI: an imputed version of NP001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP002RE: number of autonomy items answered

= 0 if no autonomy items answered
= 1-7 if one to seven autonomy items answered

2. Environmental Mastery

NP010REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP012RER (41b), NP013RER (41i), NP014RER (41n), NP015RER (41p), NP016RER (41w), NP017RER (41dd), NP018RER (41kk)

NP012RER. "I am good at juggling my time so that I can fit everything in that needs to get done."

NP013RER. "I often feel overwhelmed by my responsibilities."

NP014RER. "I am quite good at managing the many responsibilities of my daily life."

NP015RER. "I do not fit very well with the people and community around me."

NP016RER. "I have difficulty arranging my life in a way that is satisfying to me."

NP017RER. "I have been able to create a lifestyle for myself that is much to my liking."

NP018RER. "I generally do a good job of taking care of my personal finances and affairs."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: NP010REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP012RER, NP014RER, NP017RER and NP018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .74$

NP010REI: an imputed version of NP010REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP011RE: number of environmental mastery items answered

= 0 if no environmental mastery items answered

= 1-7 if one to seven items answered

3. Personal Growth

NP019REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP021RER (41c), NP022RER (41j), NP023RER (41q), NP024RER (41u), NP025RER (41x), NP026RER (41ee), NP027RER (41ll)

NP021RER. "I am not interested in activities that will expand my horizons."

NP022RER. "I have the sense that I have developed a lot as a person over time."

NP023RER. "When I think about it, I haven't really improved much as a person over the years."

NP024RER. "I think it is important to have new experiences that challenge how I think about myself and the world."

NP025RER. "I don't want to try new ways of doing things – my life is fine the way it is."

NP026RER. "I do not enjoy being in new situations that require me to change my old familiar ways of doing things."

NP027RER. "There is truth to the saying you can't teach an old dog new tricks."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: NP019REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP022RER and NP024RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .76$

NP019REI: an imputed version of NP019REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP020RE: number of personal growth items answered
= 0 if no personal growth items answered
= 1-7 if one to seven items answered

4. Positive Relations with Others

NP028REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP030RER (41d), NP031RER (41k), NP032RER (41r), NP033RER (41y), NP034RER (41bb), NP035RER (41ff), NP036RER (41mm)

NP030RER. "I don't have many people who want to listen when I need to talk."

NP031RER. "I enjoy personal and mutual conversations with family members and friends."

NP032RER. "I often feel lonely because I have few close friends with whom to share my concerns."

NP033RER. "It seems to me that most people have more friends than I do."

NP034RER. "People would describe me as a giving person, willing to share my time with others."

NP035RER. "Most people see me as loving and affectionate."

NP036RER. "I know I can trust my friends and they know they can trust me."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NP028REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP031RER, NP034RER, NP035RER and NP036RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .77$

NP028REI: an imputed version of NP028REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP029RE: number of positive relations to others items answered
= 0 if no positive relations to others items answered
= 1-7 if one to seven items answered

5. Purpose in Life

NP037REC: continuous variable based on 7 items

Psychological Well-Being
1993-1994 Sibling Respondent Mail Questionnaire

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP039RER (41e), NP040RER (41l), NP041RER (41s), NP042RER (41z), NP043RER (41gg), NP044RER (41ii), NP045RER (41nn)

NP039RER. "I enjoy making plans for the future and working to make them a reality."

NP040RER. "My daily activities often seem trivial and unimportant to me."

NP041RER. "I am an active person in carrying out the plans I set for myself."

NP042RER. "I tend to focus on the present because the future nearly always brings me problems."

NP043RER. "I don't have a good sense of what I'm trying to accomplish in life."

NP044RER. "I sometimes feel as if I've done all there is to do in life."

NP045RER. "I used to set goals for myself, but that now seems like a waste of time."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NP037REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP039RER and NP041RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .79$

NP037REI: an imputed version of NP037REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP038RE: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1-7 if one to seven items answered

6. Self-Acceptance

NP046REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP048RER (41f), NP049RER (41m), NP050RER (41t), NP051RER (41aa), NP052RER (41hh), NP053RER (41pp), NP054RER (41oo)

Psychological Well-Being
1993-1994 Sibling Respondent Mail Questionnaire

NP048RER. "I feel like many of the people I know have gotten more out of life than I have."

NP049RER. "In general, I feel confident and positive about myself."

NP050RER. "When I compare myself to friends and acquaintances, it makes me feel good about who I am."

NP051RER. "My attitude about myself is probably not as positive as most people feel about themselves."

NP052RER. "I made some mistakes in the past, but all in all everything has worked out for the best."

NP053RER. "The past had its ups and downs, but in general, I wouldn't want to change it."

NP054RER. "In many ways, I feel disappointed about my achievements in life."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NP046REC was constructed by summing the valid values across the seven items if at least one item received a valid response. NP049RER, NP050RER, NP052RER and NP053RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .81$

NP046REI: an imputed version of NP046REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

NP047RE: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1-7 if one to seven items answered

1993-1994 Sibling Respondent Telephone Interview

Psychological Well-Being ($\alpha=.58$)

Subscales (n = 6)

Psychological Well-Being
1993-1994 Sibling Respondent Telephone Interview

An 80% random sample was selected to be asked psychological well-being questions in the 1993-4 sibling telephone interviews. If SN001RE = 0, the respondent was not in this 80% sample; if SN001RE = 1, the respondent was a part of the 80% sample. For siblings who were also in the original WLS graduate sample, the values for the following variables were taken from the 1992-3 Graduate Respondent Telephone Interview (and hence the source variables also include corresponding variables with prefix "R").

1. Autonomy

SN002RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN016REC (SN001RE, 438s, 439, RN016REC), SN025REC (SN001RE, 490, 490b, RN025REC)

SN016REC. "I tend to be influenced by people with strong opinions."
SN025REC. "I judge myself by what I think is important, not by what others think is important."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN002RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2. SN025REC was reverse coded in the creation of this variable.

Notes: SN002RED is a constructed variable based on variables SN001RE, SN016REC, SN025REC and RN003RED. SN016REC is a constructed variable based on questions SN001RE, 438s, 439 and RN016REC. SN025REC is a constructed variable based on questions SN001RE, 490, 490b and RN025REC.

Reliability: $\alpha = .23$

SN003RED: number of autonomy items answered
= 0 if no autonomy items answered
= 1 if one autonomy item answered
= 2 if two autonomy items answered
= -2 if inappropriate (SN001RE = 0)

2. Environmental Mastery

SN004RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN017REC (SN001RE, 440, 440b, RN017REC), SN021REC (SN001RE, 442m, 442p, RN021REC)

SN017REC. "In general, I feel I am in charge of the situation in which I live."

SN021REC. "The demands of everyday life often get me down."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN004RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2. SN017REC was reverse coded in the creation of this variable.

Notes: SN004RED is a constructed variable based on variables SN001RE, SN017REC, SN021REC and RN004RED. SN017REC is a constructed variable based on questions SN001RE, 440, 440b and RN017REC. SN021REC is a constructed variable based on questions SN001RE, 442m, 442p and RN021REC.

Reliability: $\alpha = .32$

SN005RED: number of environmental mastery items answered
= 0 if no environmental mastery items answered
= 1 if one environmental mastery item answered
= 2 if two environmental mastery items answered
= -2 if inappropriate (SN001RE = 0)

3. Personal Growth

SN006RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN022REC (SN001RE, 442s, 443, RN022REC), SN026REC (SN001RE, 490m, 490p, RN026REC)

SN022REC. “For me, life has been a constant process of learning, changing, and growing.”

SN026REC. “I gave up trying to make big improvements or changes in my life a long time ago.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN006RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2. SN022REC was reverse coded in the creation of this variable.

Notes: SN006RED is a constructed variable based on variables SN001RE, SN022REC, SN026REC and RN006RED. SN022REC is a constructed variable based on questions SN001RE, 442s, 443 and RN022REC. SN026REC is a constructed variable based on questions SN001RE, 490m, 490p and RN026REC.

Reliability: $\alpha = .31$

SN007RED: number of personal growth items answered
= 0 if no personal growth items answered
= 1 if one personal growth item answered
= 2 if two personal growth items answered
= -2 if inappropriate (SN001RE = 0)

4. Positive Relations with Others

SN008RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN018REC (SN001RE, 440m, 440p, RN018REC), SN023REC (SN001RE, 488g, 488j, RN023REC)

SN018REC. “Maintaining close relationships has been difficult and frustrating for me.”

SN023REC. “I have not experienced many warm and trusting relationships with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN008RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2.

Notes: SN008RED is a constructed variable based on variables SN001RE, SN018REC, SN023REC and RN008RED. SN018REC is a constructed variable based on questions SN001RE, 440m, 440p and RN018REC. SN023REC is a constructed variable based on questions SN001RE, 488g, 488j and RN023REC.

Reliability: $\alpha = .56$

SN009RED: number of positive relations with others items answered
= 0 if no positive relations items answered
= 1 if one positive relations item answered
= 2 if two positive relations items answered
= -2 if inappropriate (SN001RE = 0)

5. Purpose in Life

SN010RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN019REC (SN001RE, 440s, 441, RN019REC), SN024REC (SN001RE, 488m, 488p, RN024REC)

SN019REC. "Some people wander aimlessly through life but I am not one of them."

SN024REC. "I live life one day at a time and don't really think about the future."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN010RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2. SN019REC was reverse coded in the creation of this variable.

Notes: SN010RED is a constructed variable based on questions SN001RE, SN019REC, SN024REC and RN010RED. SN019REC is a constructed variable based

on questions SN001RE, 440s, 441 and RN019REC. SN024REC is a constructed variable based on questions RN001RE, 488m, 488p and RN024REC.

Reliability: $\alpha = .14$

SN011RED: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1 if one purpose in life item answered
= 2 if two purpose in life items answered
= -2 if inappropriate (SN001RE = 0)

6. Self-Acceptance

SN012RED: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN020REC (RN001R 442, 442b, RN020REC), SN027REC (RN001RE, 492f, 492j, RN027REC)

SN020REC. "When I look at the story of my life, I am pleased with how things have turned out."

SN027REC. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Scaling: SN012RED was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. If the respondent is not in the 80% random sample for psychological well-being (SN001RE = 0), the variable is coded -2. SN020REC and SN027REC were reverse coded in the creation of this variable.

Notes: SN012RED is a constructed variable based on questions SN001RE, SN020REC, SN027REC and RN012RED. SN020REC is a constructed variable based on questions SN001RE, 442, 442b and RN020REC. SN027REC is a constructed variable based on questions SN001RE, 492f, 492j and RN027REC.

Reliability: $\alpha = .34$

SN013RED: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1 if one self-acceptance item answered
= 2 if two self-acceptance items answered

= 8 if inappropriate (SN001RE = 0)

7. Total Score for Psychological Well-Being

SN014RED: continuous variable based on 12 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SN016REC (SN001RE, 438s, 439, RN016REC), SN017REC (SN001RE, 440, 440b, RN017REC), SN018REC (SN001RE, 440m, 440p, RN018REC), SN019REC (SN001RE, 440s, 441, RN019REC), SN020REC (SN001RE, 442, 442b, RN020REC), SN021REC (SN001RE, 442m, 442p, RN021REC), SN022REC (SN001RE, 442s, 443, RN022REC), SN023REC (SN001RE, 488g, 488j, RN023REC), SN024REC (SN001RE, 488m, 488p, RN024REC), SN025REC (SN001RE, 490, 490b, RN025REC), SN026REC (SN001RE, 490m, 490p, RN026REC), SN027REC (SN001RE, 492f, 492j, RN027REC)

- SN016REC. "I tend to be influenced by people with strong opinions."
SN017REC. "In general, I feel I am in charge of the situation in which I live."
SN018REC. "Maintaining close relationships has been difficult and frustrating for me."
SN019REC. "Some people wander aimlessly through life but I am not one of them."
SN020REC. "When I look at the story of my life, I am pleased with how things have turned out."
SN021REC. "The demands of everyday life often get me down."
SN022REC. "For me, life has been a continuous process of learning, changing, and growing."
SN023REC. "I have not experienced many warm and trusting relationships with others."
SN024REC. "I live life one day at a time and don't really think about the future."
SN025REC. "I judge myself by what I think is important, not by what others think is important."
SN026REC. "I gave up trying to make big improvements or changes in my life a long time ago."
SN027REC. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 neither agree nor disagree; 5 disagree slightly; 6 disagree moderately; 7 disagree strongly; -1 don't know; -2 inappropriate (SN001RE = 0); -3 refused/not ascertained

Psychological Well-Being
1993-1994 Sibling Respondent Telephone Interview

Scaling: SN014RED was constructed by summing the valid values across the 12 items. SN017REC, SN019REC, SN020REC, SN022REC, SN025REC and SN027REC were reverse coded in the creation of this variable.

Reliability: $\alpha = .58$

Notes: SN014RED is a constructed variable based on variables SN001RE, SN016REC, SN017REC, SN018REC, SN019REC, SN020REC, SN021REC, SN022REC, SN023REC, SN024REC, SN025REC, SN026REC, SN027REC and RN014RED. SN016REC-SN027REC are themselves constructed variables derived from the respective questions listed in the parentheses after each variable in the item list.

SN014REI: an imputed version of SN014RED, with missing responses imputed to the mean of remaining valid responses prior to summing if at least six items received a valid response. The variable is coded -3 if there are fewer than six valid responses.

SN015RED: total number of psychological well-being items answered
= 0 if no psychological well-being items answered
= 1-12 if one to twelve items answered
= -2 if inappropriate (SN001RE = 0)

2004-2007 Sibling Respondent Mail Questionnaire

Psychological Well-Being ($\alpha=.92$)

Subscales (n = 6)

The items that make up this scale replicate the psychological well being items from the 1993 mail survey. However, some items from each scale may have been slightly altered or dropped, in addition to some entirely new items added.

1. Autonomy

DN001REC: continuous variable based on 5 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN004RER (q5va_m), DN007RER (q5va_s), DN009RER (q5va_y), DN101RER (q5va_a), DN107RER (q5va_g).

DN004RER. "I have confidence in my opinions even if they are contrary to the general consensus."

DN007RER. "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people."

DN009RER. "It's difficult for me to voice my opinions on controversial matters."

DN101RER. "I tend to be influenced by people with strong opinions."

DN107RER. "I judge myself by what I think is important, not by what others think is important."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DN001REC was constructed by summing the valid values across the five items if at least one item received a valid response. DN107RER, DN004RER and DN007RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the five items has a valid response.

Reliability: $\alpha = .63$

DN001REI: an imputed version of DN001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN002RE: number of autonomy items answered
= 0 if no autonomy items answered
= 1-5 if one to five autonomy items answered

2. Environmental Mastery

DN010REC: continuous variable based on 5 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN014RER (q5va_n), DN016RER (q5va_t), DN017RER (q5va_z), DN102RER (q5va_b), DN108RER (q5av_h).

DN014RER. "I am quite good at managing the many responsibilities of my daily life."

DN016RER. "I have difficulty arranging my life in a way that is satisfying to me."

DN017RER. "I have been able to create a lifestyle for myself that is much to my liking."

DN102RER. "In general, I feel I am in charge of the situation in which I live."

DN108RER. "The demands of everyday life often get me down"

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DN010REC was constructed by summing the valid values across the five items if at least one item received a valid response. DN102RER, DN014RER and DN017RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the five items has a valid response.

Reliability: $\alpha = .76$

DN010REI: an imputed version of DN010REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN011RE: number of environmental mastery items answered
= 0 if no environmental mastery items answered
= 1-5 if one to five items answered

3. Personal Growth

DN019REC: continuous variable based on 5 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN022RER (q5va_u), DN023RER (q5va_aa), DN024RER (q5va_o), DN103RER (q5va_c), DN109RER (q5va_i).

DN022RER. "I have the sense that I have developed a lot as a person over time."

DN023RER. "When I think about it, I haven't really improved much as a person over the years."

- DN024RER. "I think it is important to have new experiences that challenge how I think about myself and the world."
DN103RER. "For me, life has been a continuous process of learning, changing and growing."
DN109RER. "I gave up trying to make big improvements or changes in my life a long time ago."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DN019REC was constructed by summing the valid values across the five items if at least one item received a valid response. DN103RER, DN024RER and DN022RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the five items has a valid response.

Reliability: $\alpha = .74$

DN019REI: an imputed version of DN019REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN020RE: number of personal growth items answered
= 0 if no personal growth items answered
= 1-5 if one to five items answered

4. Positive Relations with Others

DN028REC: continuous variable based on 5 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN032RER (q5va_v), DN033RER (q5va_bb), DN034RER (q5va_p), DN104RER (q5va_d), DN110RER (q5va_j).

- DN032RER. "I often feel lonely because I have few close friends with whom to share my concerns."
DN033RER. "It seems to me that most other people have more friends than I do."
DN034RER. "People would describe me as a giving person, willing to share my time with others."

DN104RER. "Maintaining close relationships has been difficult and frustrating for me."

DN110RER. "I have not experienced many warm and trusting relationships with others."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DN028REC was constructed by summing the valid values across the five items if at least one item received a valid response. DN034RER was reverse coded in the creation of this variable. The variable is coded -2 if none of the five items has a valid response.

Reliability: $\alpha = .78$

DN028REI: an imputed version of DN028REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN029RE: number of positive relations to others items answered
= 0 if no positive relations to others items answered
= 1-5 if one to five items answered

5. Purpose in Life

DN037REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN041RER (q5va_w), DN043RER (q5va_ee), DN044RER (q5va_q), DN045RER (q5va_cc), DN105RER (q5va_e), DN111RER (q5va_k).

DN041RER. "I am an active person in carrying out the plans I set for myself."

DN043RER. "I don't have a good sense of what it is I'm trying to accomplish in life."

DN044RER. "I sometimes feel as if I've done all there is to do in life."

DN045RER. "I used to set goals for myself, but now that seems like a waste of time."

DN105RER. "I live life one day at a time and don't really think about the future."

DN111RER. "Some people wander aimlessly through life, but I am not one of them."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DN037REC was constructed by summing the valid values across the six items if at least one item received a valid response. DN111RER and DN041RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .71$

DN037REI: an imputed version of DN037REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN038RE: number of purpose in life items answered
= 0 if no purpose in life items answered
= 1-6 if one to six items answered

6. Self-Acceptance

DN046REC: continuous variable based on 5 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN049RER (q5va_x), DN050RER (q5va_dd), DN054RER (q5va_r), DN106RER (q5va_f), DN112RER (q5va_l).

DN049RER. "In general, I feel confident and positive about myself."

DN050RER. "When I compare myself to friends and acquaintances, it makes me feel good about who I am."

DN054RER. "In many ways, I feel disappointed about my achievements in life."

DN106RER. "When I look at the story of my life, I am pleased with how things have turned out."

DN112RER. "I like most aspects of my personality."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Psychological Well-Being
2004-2007 Sibling Respondent Mail Questionnaire

Scaling: DN046REC was constructed by summing the valid values across the five items if at least one item received a valid response. DN106RER, DN112RER, DN049RER and DN050RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the five items has a valid response.

Reliability: $\alpha = .78$

DN046REI: an imputed version of DN046REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DN047RE: number of self-acceptance items answered
= 0 if no self-acceptance items answered
= 1-5 if one to five items answered

2004-2007 Sibling Respondent Telephone Interview

Psychological Well-Being: not available

Source

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.

Selected Studies Using Psychological Well-Being Scales

Carr, D. (1997). The fulfillment of career dreams at midlife: Does it matter for women's mental health? *Journal of Health & Social Behavior*, 38(4), 331-334

Carr, D. (2004). 'My daughter has a career - I just raised babies': Women's intergenerational social comparisons. *Social Psychology Quarterly*, 67, 132-54.

Psychological Well-Being
Source and Selected Studies

- Carr, D. (2005). The psychological consequences of midlife men's social comparisons with their young adult sons. *Journal of Marriage and Family*, 67, 240-50.
- Marks, N. F. (1996). Flying solo at midlife: Gender, marital status, and psychological well-being. *Journal of Marriage & the Family*, 58, 917-932.
- Marks, N. F. (1998). Does it hurt to care? Caregiving, work-family conflict, and midlife well-being. *Journal of Marriage & the Family*, 60, 951-66.
- Springer, Kristen W., Robert M. Hauser, and Jeremy Freese. 2006. "Bad News Indeed for Ryff's Six-Factor Model of Well-Being." *Social Science Research* 35:1079-1101.
- Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy & Psychosomatics*, 65, 14-23.
- Ryff, C. D., Magee, W. J., Kling, K. C., & Wing, E. H. (1999). Forging macro-microlinkages in the study of psychological well-being. In C. D. Ryff, & V. W. Marshall (Eds.), *The self and society in aging processes*. New York, NY: Springer.
- Seltzer, M. M., Greenberg, J. S., Floyd, F. J., Pettee, Y., & Hong, J. (2001). Life course impacts of parenting a child with a disability. *American Journal on Mental Retardation* 106(3), 256-286.
- Springer, Kristen W., Hauser, Robert M.. 2006. "An Assessment of the Construct Validity of Ryff's Scales of Psychological Well-Being: Method, Mode, and Measurement Effects." *Social Science Research* 35:1119-1130.

Brandstadter Goal Attainment

1992-1993 Graduate Respondent Mail Questionnaire

Brandstadter Goal Attainment ($\alpha = .73$)

Subscales ($n = 2$)

1. Flexible Goal Adjustment (FGA)

MN055REC: continuous variable based on 5 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN057RER (20b), MN058RER (20c), MN059RER (20g), MN060RER (20i), MN061RER (20j)

MN057RER. "If I don't get something I want, I take it with patience."

MN058RER. "It is very difficult for me to accept a setback or defeat."

MN059RER. "I find it easy to see something positive even in a serious mishap."

MN060RER. "When everything seems to be going wrong, I can usually find a bright side to a situation."

MN061RER. "In general, I am not upset very long about an opportunity passed up."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Scaling: MN055REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items MN057RER, MN059RER, MN060RER and MN061RER were reverse coded in creating this variable.

Reliability: $\alpha = .66$

MN055REI: an imputed version of MN055REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MN056RE: number of FGA items answered

Brandstadter Goal Attainment
1992-1993 Graduate Respondent Mail Questionnaire

= 0 if no FGA items answered
= 1-5 if one to five items answered

2. Tenacious Goal Pursuit (TGP)

MN062REC: continuous variable based on 5 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MN064RER (20a), MN065RER (20d), MN066RER (20e), MN067RER (20f), MN068RER (20h)

MN064RER. “Even when things seem hopeless, I keep on fighting to reach my goals.”

MN065RER. “I stick to my goals and projects even in the face of great adversity.”

MN066RER. “The harder a goal is to achieve, the more appeal it has to me.”

MN067RER. “I can be very stubborn in pursuing my goals.”

MN068RER. “To avoid disappointment, I don’t set my goals too high.”

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Scaling: MN062REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items MN064RER, MN065RER, MN066RER and MN067RER were reverse coded in creation of this variable.

Reliability: $\alpha = .74$

MN062REI: an imputed version of MN062REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MN063RE: number of TGP items answered

= 0 if no TGP items answered

= 1-5 if one to five items answered

1992-1993 Graduate Respondent Telephone Interview

Brandstadter Goal Attainment: not available

2003-2005 Graduate Respondent Mail Questionnaire

Brandstadter Goal Attainment: not available

2003-2005 Graduate Respondent Telephone Interview

Brandstadter Goal Attainment: not available

1993-1994 Sibling Respondent Mail Questionnaire

Brandstadter Goal Attainment ($\alpha = .74$)

Subscales ($n = 2$)

1. Flexible Goal Adjustment (FGA)

NP055REC: continuous variable based on 5 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP057RER (42b), NP058RER (42c), NP059RER (42g), NP060RER (42i), NP061RER (42j)

NP057RER. "If I don't get something I want, I take it with patience."

NP058RER. "It is very difficult for me to accept a setback or defeat."

NP059RER. "I find it easy to see something positive even in a serious mishap."

NP060RER. "When everything seems to be going wrong, I can usually find a bright side to the situation."

NP061RER. "In general, I am not upset very long about an opportunity passed up."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Brandstadter Goal Attainment
1993-1994 Sibling Respondent Mail Questionnaire

Scaling: NP055REC was constructed by summing the valid values across the five items if at least one item received a valid response. NP057RER, NP059RER, NP060RER and NP061RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .68$

NP055REI: an imputed version of NP055REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NP056RE: number of flexible FGA items answered
= 0 if no FGA items answered
= 1-5 if one to five items answered

2. Tenacious Goal Pursuit (TGP)

NP062REC: continuous variable based on 5 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NP064RER (42a), NP065RER (42d), NP066RER (42e), NP067RER (41f), NP068RER (41h)

NP064RER. "Even when things seem hopeless, I keep on fighting to reach my goals."

NP065RER. "I stick to my goals and projects even in the face of great difficulties."

NP066RER. "The harder a goal is to achieve, the more appeal it has to me."

NP067RER. "I can be very stubborn in pursuing my goals."

NP068RER. "To avoid disappointments, I don't set my goals too high."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Scaling: NP062REC was constructed by summing the valid values across the five items if at least one item received a valid response. NP064RER, NP065RER, NP066RER and NP067RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .73$

NP063RE: number of TGP items answered
= 0 if no TGP items answered
= 1-5 if one to five items answered

1993-1994 Sibling Respondent Telephone Interview

Brandstadter Goal Attainment: not available

2004-2007 Sibling Respondent Mail Questionnaire

Brandstadter Goal Attainment: not available

2004-2007 Sibling Respondent Telephone Interview

Brandstadter Goal Attainment: not available

Source

Brandstadter, J. (1984). Personal and social control over development: Some implications of an action perspective in life-span developmental psychology. In P. B. Baltes, & O. G. Grim, Jr. (Eds.), *Life-span development and behavior* (Volume 6). New York, NY: Academic Press.

Brandstadter, J., & Renner, G. (1990). Tenacious goals pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology & Aging, 5*, 58-67.

Selected Studies Using Brandstadter Goal Attainment Scales

Seltzer, M. M., Greenberg, J. S., & Floyd, F. (2000). Flexible goal adjustment as a coping mechanism for midlife parents of children with disabilities. Paper presented at the Meetings of the Gerontological Society of American, Washington DC.

Brandstadter Goal Attainment
Source and Selected Studies

Seltzer, Marsha Mailick, Jan S. Greenberg, Frank J. Floyd, and Jinkuk Hong. 2004.
"Accommodative Coping and Well-Being of Midlife Parents of Children With Mental Health
Problems or Developmental Disabilities." *American Journal of Orthopsychiatry* 74:187-195.

Big-Five Personality

1992-1993 Graduate Respondent Mail Questionnaire

Big-Five Personality ($\alpha=.81$)

Subscales (n = 5)

1. Extraversion

MH001REC: continuous variable based on 6 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MH003RER (17a), MH004RER (17d), MH005RER (17f), MH006RER (17j), MH007RER (17t), MH008RER (17v)

I see myself as someone who

MH003RER. "is talkative."

MH004RER. "is reserved."

MH005RER. "is full of energy."

MH006RER. "tends to be quiet."

MH007RER. "is sometimes shy, inhibited."

MH008RER. "generates a lot of enthusiasm."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MH001REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items MH003RER, MH005RER and MH008RER were reverse coded in the creation this variable.

Reliability: $\alpha = .76$

MH001REI: an imputed version of MH001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

Big-Five Personality
1992-1993 Graduate Respondent Mail Questionnaire

MH002RE: number of extraversion items answered
= 0 if no extraversion items answered
= 1-6 if one to six extraversion items answered

2. Agreeableness

MH009REC: continuous variable based on 6 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MH011RER (17b), MH012RER (17o), MH013RER (17p), MH014RER (17w), MH015RER (17y), MH016RER (17bb)

I see myself as someone who

MH011RER. “tends to find fault with others.”

MH012RER. “is sometimes rude to others.”

MH013RER. “is generally trusting.”

MH014RER. “can be cold and aloof.”

MH015RER. “is considerate to almost everyone.”

MH016RER. “likes to cooperate with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MH009REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items MH013RER, MH015RER and MH016RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .70$

MH009REI: an imputed version of MH009REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MH010RE: numbers of agreeableness items answered
= 0 if no agreeableness items answered
= 1-6 if one to six items answered

3. Conscientiousness

Big-Five Personality
1992-1993 Graduate Respondent Mail Questionnaire

MH017REC: continuous variable based on 6 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MH019RER (17c), MH020RER (17h), MH021RER (17l), MH022RER (17q), MH023RER (17u), MH024RER (17cc)

I see myself as someone who

MH019RER. “does a thorough job.”

MH020RER. “is a reliable workers.”

MH021RER. “tends to be disorganized.”

MH022RER. “is lazy at times.”

MH023RER. “does things efficiently.”

MH024RER. “is easily distracted.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MH017REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items MH019RER, MH020RER and MH023RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .66$

MH017REI: an imputed version of MH017REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MH018RE: number of conscientiousness items answered
= 0 if no conscientiousness items answered
= 1-6 if one to six conscientiousness items answered

4. Neuroticism

MH025REC: continuous variable based on 5 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MH027RER (17i), MH028RER (17m), MH029RER (17r), MH030RER (17x), MH031RER (17z)

I see myself as someone who

MH027RER. “can be tense.”

Big-Five Personality
1992-1993 Graduate Respondent Mail Questionnaire

MH028RER. "is emotionally stable, not easily upset."
MH029RER. "worries a lot."
MH030RER. "remains calm in tense situations."
MH031RER. "gets nervous easily."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: MH025REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items MH027RER, MH029RER and MH031RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .77$

MH025REI: an imputed version of MH025REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MH026RE: number of neuroticism items answered
= 0 if no neuroticism items answered
= 1-5 if one to five items answered

5. Openness

MH032REC: continuous variable based on 6 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MH034RER (17e), MH035RER (17g), MH036RER (17k), MH037RER (17n), MH038RER (17s), MH039RER (17aa)

I see myself as someone who

MH034RER. "prefers the conventional, traditional."
MH035RER. "prefers work that is routine and simple."
MH036RER. "values artistic, aesthetic experiences."
MH037RER. "has an active imagination."
MH038RER. "wants things to be simple and clear-cut."
MH039RER. "is sophisticated in art, music, or literature."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Big-Five Personality
1992-1993 Graduate Respondent Mail Questionnaire

Scaling: MH032REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items MH036RER, MH037RER and MH039RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .61$

MH032REI: an imputed version of MH032REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

MH033RE: number of openness items answered
= 0 if no openness items answered
= 1-6 if one to six items answered

1992-1993 Graduate Respondent Telephone Interview

Big-Five Personality ($\alpha=.54$)

Subscales ($n = 5$)

1. Extraversion

RH001REC: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RH011RE (308n, 309), RH016RE (312f, 312j)

I see myself as someone who

RH011RE. "is outgoing and sociable."

RH016RE. "tends to be quiet."

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained.

Big-Five Personality Scale
1992-1993 Graduate Respondent Telephone Interview

Scaling: RH001REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. RH011RE was reverse coded in the creation of this variable.

Notes: RH001RE is a constructed variable based on questions 308n and 309. RH016RE is a constructed variable based on questions 312f and 312j.

Reliability: $\alpha = .57$

RH002REC: number of extraversion items answered

- = 0 if no extraversion items answered
- = 1 if one extraversion item answered
- = 2 if two extraversion items answered

2. Openness

RH003REC: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RH012RE (310, 310b), RH017RE (312m, 312p)

I see myself as someone who

RH012RE. "is inventive."

RH017RE. "prefers work that is simple and routine."

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained.

Scaling: RH003REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. RH012RE was reverse coded in the creation of this variable.

Notes: RH012RE is a constructed variable based on questions 310 and 310b. RH017RE is a constructed variable based on questions 312m and 312p.

Reliability: $\alpha = .57$

RH004REC: number of openness items answered

- = 0 if no openness items answered
- = 1 if one openness item answered

Big-Five Personality Scale
1992-1993 Graduate Respondent Telephone Interview

= 2 if two openness items answered

3. Neuroticism

RH005REC: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RH013RE (310f, 310j), RH020RE (314m, 314p)

I see myself as someone who

RH013RE. “worries a lot.”

RH020RE. “is relaxed and handles stress well.”

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained.

Scaling: RH005REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. RH013RE was reverse coded in the creation of this variable.

Notes: RH013RE is a constructed variable based on questions 310f and 310j. RH020RE is a constructed variable based on questions 314m and 314p.

Reliability: $\alpha = .58$

RH006REC: number of neuroticism items answered

= 0 if no neuroticism items answered

= 1 if one neuroticism item answered

= 2 if two neuroticism items answered

4. Conscientiousness

RH007REC: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RH015RE (310s, 311), RH019RE (314f, 314j)

I see myself as someone who

Big-Five Personality Scale
1992-1993 Graduate Respondent Telephone Interview

RH015RE. “can be somewhat careless.”
RH019RE. “is easily distracted.”

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don’t know; -3 refused/not ascertained.

Scaling: RH007REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3.

Notes: RH015RE is a constructed variable based on questions 310s and 311. RH019RE is a constructed variable based on questions 314f and 314j.

Reliability: $\alpha = .44$

RH008REC: number of conscientiousness items answered
= 0 if no conscientiousness items answered
= 1 if one conscientiousness item answered
= 2 if two conscientiousness items answered

5. Agreeableness

RH009REC: continuous variable based on 2 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RH014RE (310m, 310p), RH018RE (314, 314b)

I see myself as someone who

RH014RE. “has a forgiving nature.”
RH018RE. “tends to find fault with others.”

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don’t know; -3 refused/not ascertained.

Scaling: RH009REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. RH014RE was reverse coded in the creation of this variable.

Notes: RH014RE is a constructed variable based on questions 310m and 310p. RH018RE is a constructed variable based on questions 314 and 314b.

Big-Five Personality Scale
1992-1993 Graduate Respondent Telephone Interview

Reliability: $\alpha = .38$

RH010REC: number of agreeableness items answered
= 0 if no agreeableness items answered
= 1 if one agreeableness item answered
= 2 if two agreeableness items answered

2003-2005 Graduate Respondent Mail Questionnaire

Big-Five Personality ($\alpha=.83$)

Subscales (n = 5)

1. Extraversion

IH001REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IH003RER (q1va_a), IH004RER (q1va_d), IH005RER (q1va_f), IH006RER (q1va_j), IH007RER (q1va_t), MH008RER (q1va_v)

I see myself as someone who

IH003RER. "is talkative."

IH004RER. "is reserved."

IH005RER. "is full of energy."

IH006RER. "tends to be quiet."

IH007RER. "is sometimes shy, inhibited."

IH008RER. "generates a lot of enthusiasm."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: IH001REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IH003RER, IH005RER and IH008RER were reverse coded in the creation this variable. This variable is coded -2 if there is no valid response.

Big-Five Personality Scale
2003-2005 Graduate Respondent Mail Questionnaire

Reliability: $\alpha = .75$

IH001REI: an imputed version of IH001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IH002RE: number of extraversion items answered
= 0 if no extraversion items answered
= 1-6 if one to six extraversion items answered

2. Agreeableness

IH009REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IH011RER (q1va_b), IH012RER (q1va_o), IH013RER (q1va_p), IH014RER (q1va_w), IH015RER (q1va_y), IH016RER (q1va_bb)

I see myself as someone who

IH011RER. “tends to find fault with others.”

IH012RER. “is sometimes rude to others.”

IH013RER. “is generally trusting.”

IH014RER. “can be cold and aloof.”

IH015RER. “is considerate to almost everyone.”

IH016RER. “likes to cooperate with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: IH009REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IH013RER, IH015RER and IH016RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .69$

IH009REI: an imputed version of IH009REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IH010RE: numbers of agreeableness items answered
= 0 if no agreeableness items answered
= 1-6 if one to six items answered

3. Conscientiousness

IH017REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IH019RER (q1va_c), IH020RER (q1va_h), IH021RER (q1va_l), IH022RER (q1va_q), IH023RER (q1va_u), IH024RER (q1va_cc)

I see myself as someone who

IH019RER. “does a thorough job.”

IH020RER. “is a reliable workers.”

IH021RER. “tends to be disorganized.”

IH022RER. “is lazy at times.”

IH023RER. “does things efficiently.”

IH024RER. “is easily distracted.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: IH017REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IH019RER, IH020RER and IH023RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .69$

IH017REI: an imputed version of IH017REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IH018RE: number of conscientiousness items answered
= 0 if no conscientiousness items answered
= 1-6 if one to six conscientiousness items answered

4. Neuroticism

IH025REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IH027RER (q1av_i), IH028RER (q1va_m), IH029RER (q1va_r), IH030RER (q1va_x), IH031RER (q1va_z)

I see myself as someone who

IH027RER. “can be tense.”

IH028RER. “is emotionally stable, not easily upset.”

IH029RER. “worries a lot.”

IH030RER. “remains calm in tense situations.”

IH031RER. “gets nervous easily.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: IH025REC was constructed by summing the valid values across the five items if at least one item received a valid response. Items IH027RER, IH029RER and IH031RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .74$

IH025REI: an imputed version of IH025REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IH026RE: number of neuroticism items answered
= 0 if no neuroticism items answered
= 1-5 if one to five items answered

5. Openness

IH032REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IH034RER (q1va_e), IH035RER (q1va_g), IH036RER (q1va_k), IH037RER (q1va_n), IH038RER (q1va_s), IH039RER (q1va_aa)

I see myself as someone who

Big-Five Personality Scale
2003-2005 Graduate Respondent Mail Questionnaire

IH034RER. “prefers the conventional, traditional.”
IH035RER. “prefers work that is routine and simple.”
IH036RER. “values artistic, aesthetic experiences.”
IH037RER. “has an active imagination.”
IH038RER. “wants things to be simple and clear-cut.”
IH039RER. “is sophisticated in art, music, or literature.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/refused.

Scaling: IH032REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IH036RER, IH037RER and IH039RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .62$

IH032REI: an imputed version of IH032REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

IH033RE: number of openness items answered
= 0 if no openness items answered
= 1-6 if one to six items answered

2003-2005 Graduate Respondent Telephone Interview

Big-Five Personality: not available

1993-1994 Sibling Respondent Mail Questionnaire

Big-Five Personality ($\alpha=.81$)

Subscales (n = 5)

1. Extraversion

NH001REC: continuous variable based on 6 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NH003RER (39a), NH004RER (39d), NH005RER (39f), NH006RER (39j), NH007RER (39t), NH008RER (39v)

I see myself as someone who

NH003RER. "is talkative."

NH004RER. "is reserved."

NH005RER. "is full of energy"

NH006RER. "tends to be quiet."

NH007RER. "is sometimes shy, inhibited."

NH008RER. "generates a lot of enthusiasm."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NH001REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items NH003RER, NH005RER and NH008RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .76$

NH001REI: an imputed version of NH001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NH002RE: number of extraversion items answered
= 0 if no extraversion items answered
= 1-6 if one to six items answered

2. Agreeableness

NH009REC: continuous variable based on 6 items

Big-Five Personality Scale
1993-1994 Sibling Respondent Mail Questionnaire

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NH011RER (39b), NH012RER (39o), NH013RER (39p), NH014RER (39w), NH015RER (39y), NH016RER (39bb)

I see myself as someone who

NH011RER. “tends to find fault with others.”

NH012RER. “is sometimes rude to others.”

NH013RER. “is generally trusting.”

NH014RER. “can be cold and aloof.”

NH015RER. “is considerate to almost everyone.”

NH016RER. “likes to cooperate with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NH009REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items NH013RER, NH015RER and NH016RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .69$

NH009REI: an imputed version of NH009REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NH010RE: number of agreeableness items answered
= 0 if no agreeableness items answered
= 1-6 if one to six items answered

3. Conscientiousness

NH017REC: continuous variable based on 6 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NH019RER (39c), NH020RER (39h), NH021RER (39i), NH022RER (39q), NH023RER (39u), NH024RER (39cc)

I see myself as someone who

NH019RER. “does a thorough job.”

NH020RER. “is a reliable worker.”

Big-Five Personality Scale
1993-1994 Sibling Respondent Mail Questionnaire

NH021RER. “tends to be disorganized.”

NH022RER. “is lazy at times.”

NH023RER. “does things efficiently.”

NH024RER. “is easily distracted.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NH017REC was constructed by summing the valid values across the six items if at least one item received a valid response. NH019RER, NH020RER and NH023RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .69$

NH017REI: an imputed version of NH017REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NH018RE: number of conscientiousness items answered

= 0 if no conscientiousness items answered

= 1-6 if one to six items answered

4. Neuroticism

NH025REC: continuous variable based on 5 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NH027RER (39i), NH028RER (39m), NH029RER (39r), NH030RER (39x), NH031RER (39z)

I see myself as someone who

NH027RER. “can be tense.”

NH028RER. “is emotionally stable, not easily upset.”

NH029RER. “worries a lot.”

NH030RER. “remains calm in tense situations.”

NH031RER. “gets nervous easily.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Big-Five Personality Scale
1993-1994 Sibling Respondent Mail Questionnaire

Scaling: NH025REC was constructed by summing the valid values across the five items if at least one item received a valid response. NH027RER, NH029RER and NH031RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .75$

NH025REI: an imputed version of NH025REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NH026RE: number of neuroticism items answered
= 0 if no neuroticism items answered
= 1-5 if one to five items answered

5. Openness

NH032REC: continuous variable based on 6 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NH034RER (39e), NH035RER (39g), NH036RER (39k), NH037RER (39n), NH038RER (39s), NH039RER (39aa)

I see myself as someone who

NH034RER. “prefers the conventional, traditional.”

NH035RER. “prefers work that is routine and simple.”

NH036RER. “values artistic, aesthetic experiences.”

NH037RER. “has an active imagination.”

NH038RER. “wants things to be simple and clear-cut.”

NH039RER. “is sophisticated in art, music, or literature.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NH032REC was constructed by summing the valid values across the six items if at least one item received a valid response. NH036RER, NH037RER and NH039RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .58$

Big-Five Personality Scale
1993-1994 Sibling Respondent Mail Questionnaire

NH032REI: an imputed version of NH032REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

NH033RE: number of openness items answered
= 0 if no openness items answered
= 1-6 if one to six items answered

1993-1994 Sibling Respondent Telephone Interview

Big-Five Personality ($\alpha=.54$)

Subscales ($n = 5$)

For all personality items in the 1993-4 sibling interviews, the response category “neither agree nor disagree” is coded as 0. In addition, the response category “neither agree nor disagree” is not counted as an answered question in the summary items and does not contribute a value to the summary scores.

1. Extraversion

SH001REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SH011RE (308n, 309, RH001RE), SH016RE (312f, 312j, RH016RE)

I see myself as someone who

SH011RE. “is outgoing and sociable.”

SH016RE. “tends to be quiet.”

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don’t know; -3 refused/not ascertained

Scaling: SH001REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. SH011RE was reverse coded in the creation of this variable.

Big-Five Personality Scale
1993-1994 Sibling Respondent Telephone Interview

Notes: SH011RE is a constructed variable based on questions 308n, 309 and RH0011RE. SH016RE is a constructed variable based on questions 312f, 312j and RH016RE.

Reliability: $\alpha = .57$

SH002REC: number of extraversion items answered
= 0 if no extraversion items answered
= 1 if one extraversion item answered
= 2 if two extraversion items answered

2. Openness

SH003REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SH012RE (310, 310b, RH012RE), SH017RE (312m, 312p, RH017RE)

I see myself as someone who

SH012RE. "is inventive."

SH017RE. "prefers work that is routine and simple."

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained

Scaling: SH003REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. SH012RE was reverse coded in the creation of this variable.

Notes: SH012RE is a constructed variable based on questions 310, 310b and RH012RE. RH017RE is a constructed variable based on questions 312m, 312p and RH017RE.

Reliability: $\alpha = .31$

SH004REC: number of openness questions answered
= 0 if no openness items answered
= 1 if one openness item answered
= 2 if two openness items answered

3. Neuroticism

SH005REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SH013RE (310f, 310j, RH013RE), SH020RE (314m, 314p, RH020RE)

I see myself as someone who

SH013RE. “worries a lot.”

SH020RE. “is relaxed and handles stress well.”

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don’t know; -3 refused/not ascertained

Scaling: SH005REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. SH13RE was reverse coded in the creation of this variable.

Notes: SH013RE is a constructed variable based on questions 310f, 310j and RH013RE. SH020RE is a constructed variable based on questions 314m, 314p and RH020RE.

Reliability: $\alpha = .58$

SH006REC: number of neuroticism items answered

= 0 if no neuroticism items answered

= 1 if one neuroticism item answered

= 2 if two neuroticism items answered

4. Conscientiousness

SH007REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SH015RE (310s, 311, RH015RE), SH019RE (314f, 314j, RH019RE)

I see myself as someone who

SH015RE. “can be somewhat careless.”

SH019RE. “is easily distracted.”

Big-Five Personality Scale
1993-1994 Sibling Respondent Telephone Interview

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained

Scaling: SH007REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3.

Notes: SH015RE is a constructed variable based on questions 310s, 311 and RH015RE. SH019RE is a constructed variable based on questions 314f, 314j and RH019RE.

Reliability: $\alpha = .47$

SH008REC: number of conscientiousness items answered
= 0 if no conscientiousness items answered
= 1 if one conscientiousness item answered
= 2 if two conscientiousness items answered

5. Agreeableness

SH009REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SH014RE (310m, 310p, RH014RE), SH018RE (314, 314b, RH018RE)

I see myself as someone who

SH014RE. "has a forgiving nature."

SH018RE. "tends to find fault with others."

Coding: 0 neither agree nor disagree; 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -1 don't know; -3 refused/not ascertained

Scaling: SH009REC was constructed by summing the valid values across both items. If either of the two components is missing, the variable is coded -3. SH014RE was reverse coded in the creation of this variable.

Notes: SH014RE is a constructed variable based on questions 310m, 310p and RH014RE. SH018RE is a constructed variable based on questions 314, 314b and RH018RE.

Reliability: $\alpha = .37$

SH010REC: number of agreeableness items answered

Big-Five Personality Scale
1993-1994 Sibling Respondent Telephone Interview

- = 0 if no agreeableness items answered
- = 1 if one agreeableness item answered
- = 2 if two agreeableness items answered

2004-2007 Sibling Respondent Mail Questionnaire

Big-Five Personality ($\alpha=.81$)

Subscales (n = 5)

1. Extraversion

DH001REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DH003RER (q1va_a), DH004RER(q1va_d), DH005RER (q1va_f), DH006RER (q1va_j), DH007RER (q1va_t), DH008RER (q1va_v).

I see myself as someone who

- DH003RER. "is talkative."
- DH004RER. "is reserved."
- DH005RER. "is full of energy"
- DH006RER. "tends to be quiet."
- DH007RER. "is sometimes shy, inhibited."
- DH008RER. "generates a lot of enthusiasm."

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DH001REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items DH003RER, DH005RER and DH008RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .75$

Big-Five Personality Scale
2004-2007 Sibling Respondent Mail Questionnaire

DH001REI: an imputed version of DH001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DH002RE: number of extraversion items answered
= 0 if no extraversion items answered
= 1-6 if one to six items answered

2. Agreeableness

DH009REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DH011RER (q1va_b), DH012RER (q1va_o), DH013RER (q1va_p), DH014RER (q1va_w), DH015RER (q1va_y), DH016RER (q1va_bb)

I see myself as someone who

DH011RER. “tends to find fault with others.”
DH012RER. “is sometimes rude to others.”
DH013RER. “is generally trusting.”
DH014RER. “can be cold and aloof.”
DH015RER. “is considerate to almost everyone.”
DH016RER. “likes to cooperate with others.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: NH009REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items DH013RER, DH015RER and DH016RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .68$

DH009REI: an imputed version of DH009REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DH010RE: number of agreeableness items answered
= 0 if no agreeableness items answered

Big-Five Personality Scale
2004-2007 Sibling Respondent Mail Questionnaire

= 1-6 if one to six items answered

3. Conscientiousness

DH017REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DH019RER (q1va_c), DH020RER (q1va_h), DH021RER (q1va_l), DH022RER (q1va_q), DH023RER (q1va_u), DH024RER (q1va_cc)

I see myself as someone who

DH019RER. “does a thorough job.”
DH020RER. “is a reliable worker.”
DH021RER. “tends to be disorganized.”
DH022RER. “is lazy at times.”
DH023RER. “does things efficiently.”
DH024RER. “is easily distracted.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: DH017REC was constructed by summing the valid values across the six items if at least one item received a valid response. DH019RER, DH020RER and DH023RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .69$

DH017REI: an imputed version of DH017REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DH018RE: number of conscientiousness items answered
= 0 if no conscientiousness items answered
= 1-6 if one to six items answered

4. Neuroticism

DH025REC: continuous variable based on 5 items

Big-Five Personality Scale
2004-2007 Sibling Respondent Mail Questionnaire

Items: 2004-2007 Sibling Mail Questionnaire, Questions DH027RER (q1va_i), DH028RER (q1va_m), DH029RER (q1va_r), DH030RER (q1va_x), DH031RER (q1va_z)

I see myself as someone who

DH027RER. “can be tense.”

DH028RER. “is emotionally stable, not easily upset.”

DH029RER. “worries a lot.”

DH030RER. “remains calm in tense situations.”

DH031RER. “gets nervous easily.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused.

Scaling: DH025REC was constructed by summing the valid values across the five items if at least one item received a valid response. DH027RER, DH029RER and DH031RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .72$

DH025REI: an imputed version of DH025REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DH026RE: number of neuroticism items answered
= 0 if no neuroticism items answered
= 1-5 if one to five items answered

5. Openness

DH032REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DH034RER (q1va_e), DH035RER (q1va_g), DH036RER (q1va_k), DH037RER (q1va_n), DH038RER (q1va_s), DH039RER (q1va_aa)

I see myself as someone who

DH034RER. “prefers the conventional, traditional.”

Big-Five Personality Scale
2004-2007 Sibling Respondent Mail Questionnaire

DH035RER. “prefers work that is routine and simple.”

DH036RER. “values artistic, aesthetic experiences.”

DH037RER. “has an active imagination.”

DH038RER. “wants things to be simple and clear-cut.”

DH039RER. “is sophisticated in art, music, or literature.”

Coding: 1 agree strongly; 2 agree moderately; 3 agree slightly; 4 disagree slightly; 5 disagree moderately; 6 disagree strongly; -3 not ascertained/ refused

Scaling: DH032REC was constructed by summing the valid values across the six items if at least one item received a valid response. DH036RER, DH037RER and DH039RER were reverse coded in the creation of this variable. The variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .58$

DH032REI: an imputed version of DH032REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least three items received a valid response. The variable is coded -3 if there are fewer than three valid responses.

DH033RE: number of openness items answered
= 0 if no openness items answered
= 1-6 if one to six items answered

2004-2007 Sibling Respondent Telephone Interview

Big-Five Personality: not available

Source

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The "Big Five" inventory – version 4a and 5a*. Berkely, CA: Institute of Personality and Social Research, University of California, Berkeley

Selected Studies Using Big Five Personality Scales

Flynn, Kathryn E. and Maureen A. Smith. 2007. "Personality and Health Care Decision-Making Style " *Journal of Gerontology: Psychological Sciences* 62B:261-267.

Hauser, R. M., Kuo, H. D., & Cartmill, R. (1997). Birth order and personality: Are there any effects? Paper presented at the Meetings of the Population Association of American, Washington, D.C.

Kuo, H. D. (1997). Socioeconomic status and personality in mid-life: An application of the sibling resemblance model. Paper presented at the Meetings of the American Sociological Association, Toronto, Canada.

Optimism Index

1992-1993 Graduate Respondent Mail Questionnaire

Optimism Index: not available

1992-1993 Graduate Respondent Telephone Interview

Optimism Index: not available

2003-2005 Graduate Respondent Mail Questionnaire

Optimism Index

IN070REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN301RER (q2va_a), IN302RER (q2va_b), IN303RER (q2va_c), IN304RER (q2va_d), IN305RER (q2a_e), IN306RER (q2a_f)

The following questions ask about your general feelings or attitudes. Please indicate how much you agree with each statement.

IN301RER. "In uncertain times, I usually expect the best."

IN302RER. "If something can go wrong for me, it will."

IN303RER. "I'm always optimistic about my future."

IN304RER. "I hardly ever expect things to go my way."

IN305RER. "I rarely count on good things happening to me."

IN306RER. "Overall, I expect more good things to happen to me than bad."

Coding: 1 strongly agree; 2 agree; 3 disagree; 4 strongly disagree; -3 not ascertained/refused.

Optimism Index
2003-2005 Graduate Respondent Mail Questionnaire

Scaling: IN070REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IN301RER, IN303RER and IN306RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .77$

IN071RE: number of optimism items answered
= 0 if no optimism items answered
= 1-6 if one to six items answered

2003-2005 Graduate Respondent Telephone Interview

Optimism Index: not available

1993-1994 Sibling Respondent Mail Questionnaire

Optimism Index: not available

1993-1994 Sibling Respondent Telephone Interview

Optimism Index: not available

2004-2007 Sibling Respondent Mail Questionnaire

Optimism Index

DN070REC: continuous variable based on 6 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN301RER (q2va_a), DN302RER (q2va_b), DN303RER (q2va_c), DN304RER (q2va_d), DN305RER (q2a_e), DN306RER (q2a_f)

The following questions ask about your general feelings or attitudes. Please indicate how much you agree with each statement.

DN301RER. "In uncertain times, I usually expect the best."

DN302RER. "If something can go wrong for me, it will."

DN303RER. "I'm always optimistic about my future."

DN304RER. "I hardly ever expect things to go my way."

DN305RER. "I rarely count on good things happening to me."

DN306RER. "Overall, I expect more good things to happen to me than bad."

Coding: 1 strongly agree; 2 agree; 3 disagree; 4 strongly disagree; -3 not ascertained/refused.

Scaling: DN070REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items DN301RER, DN303RER and DN306RER were reverse coded in the creation of this variable. This variable is coded -2 if none of the six items has a valid response.

Reliability: $\alpha = .79$

DN071RE: number of optimism items answered

= 0 if no optimism items answered

= 1-6 if one to six items answered

Optimism Index
Source and Selected Studies

2004-2007 Sibling Respondent Telephone Interview

Optimism Index: not available

Source

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). "Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test." *Journal of Personality and Social Psychology*, 67, 1063-1078.

Selected Studies Using Optimism Index

Mattering Index

1992-1993 Graduate Respondent Mail Questionnaire

Mattering Index: not available

1992-1993 Graduate Respondent Telephone Interview

Mattering Index: not available

2003-2005 Graduate Respondent Mail Questionnaire

Mattering Index

IN072REC: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IN401RER (q3va_a), IN402RER (q3va_b), IN403RER (q3va_c), IN404RER (q3va_d), IN405RER (q3a_e), IN406RER (q3a_f)

The following questions ask about your general feelings or attitudes. Please indicate how much you agree with each statement.

IN401RER. "People tend to rely on me for support"

IN402RER. "For whatever reason, it is hard for me to get people's attention."

IN403RER. "Whatever else may happen, people do not ignore me."

IN404RER. "For better or worse, people generally know when I am around."

IN405RER. "People are usually aware of my presence."

IN406RER. "People count on me to be there in times of need."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Mattering Index
2003-2005 Graduate Respondent Mail Questionnaire

Scaling: IN072REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items IN401RER, IN403RER, IN404RER, IN405RER and IN406RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .76$

IN073RE: number of mattering index items answered
= 0 if no mattering index items answered
= 1-6 if one to six items answered

2003-2005 Graduate Respondent Telephone Interview

Mattering Index: not available

1993-1994 Sibling Respondent Mail Questionnaire

Mattering Index: not available

1993-1994 Sibling Respondent Telephone Interview

Mattering Index: not available

2004-2007 Sibling Respondent Mail Questionnaire

Mattering Index

DN072REC: continuous variable based on 6 items

Mattering Index
2004-2007 Sibling Respondent Mail Questionnaire

Items: 2004-2007 Sibling Mail Questionnaire, Questions DN401RER (q3va_a), DN402RER (q3va_b), DN403RER (q3va_c), DN404RER (q3va_d), DN405RER (q3a_e), DN406RER (q3a_f)

The following questions ask about your general feelings or attitudes. Please indicate how much you agree with each statement.

DN401RER. "People tend to rely on me for support"

DN402RER. "For whatever reason, it is hard for me to get people's attention."

DN403RER. "Whatever else may happen, people do not ignore me."

DN404RER. "For better or worse, people generally know when I am around."

DN405RER. "People are usually aware of my presence."

DN406RER. "People count on me to be there in times of need."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -3 not ascertained/refused.

Scaling: DN072REC was constructed by summing the valid values across the six items if at least one item received a valid response. Items DN401RER, DN403RER, DN404RER, DN405RER and DN406RER were reverse coded in the creation of this variable. This variable is coded -2 if there is no valid response.

Reliability: $\alpha = .77$

DN073RE: number of mattering index items answered
= 0 if no mattering index items answered
= 1-6 if one to six items answered

2004-2007 Sibling Respondent Telephone Interview

Mattering Index: not available

Source

Elliott, G. C., Colangelo, M. F., & Gelles, R. J. (2005). "Mattering and suicide ideation: Establishing and elaborating a relationship." *Social Psychology Quarterly*, 68, 223-238.

Elliott, G. C., Kao, S., & Grant, A. (2004). "Mattering: Empirical validation of a social-psychological concept." *Self and Identity*, 3, 339-354.

Selected Studies Using Mattering Index

TK

Center for Epidemiological Studies Depression Scale (CES-D)

1992-1993 Graduate Respondent Mail Questionnaire

Psychological Distress /Depressive Symptoms (CES-D)

MU001REC: continuous variable based on 20 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MU003RER (18a), MU004RER (18b), MU005RER (18c), MU006RER (18d), MU007RER (18e), MU008RER (18f), MU009RER (18g), MU010RER (18h), MU011RER (18i), MU012RER (18j), MU013RER (18k), MU014RER (18l), MU015RER (18m), MU016RER (18n), MU017RER (18o), MU018RER (18p), MU019RER (18q), MU020RER (18r), MU021RER (18s), MU022RER (18t)

On how many days in the past week did you

MU003RER. “feel you could not shake off the blues even with help from your family and friends?”

MU004RER. “feel bothered by things that don’t usually bother you?”

MU005RER. “think your life had been a failure?”

MU006RER. “feel happy?”

MU007RER. “feel that people were unfriendly?”

MU008RER. “feel lonely?”

MU009RER. “enjoy life?”

MU010RER. “have crying spells?”

MU011RER. “feel the people disliked you?”

MU012RER. “feel sad?”

MU013RER. “feel depressed?”

MU014RER. “have trouble keeping your mind on what you were doing?”

MU015RER. “not feel like eating, your appetite was poor?”

MU016RER. “feel you were just as good as other people?”

MU017RER. “feel everything you did was an effort?”

MU018RER. “feel hopeful about the future?”

MU019RER. “feel fearful?”

MU020RER. “sleep restlessly?”

MU021RER. “talk less than usual?”

MU022RER. “feel you could not ‘get going’?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused.

Center for Epidemiological Studies Depression Scale (CES-D)
1992-1993 Graduate Respondent Mail Questionnaire

Scaling: MU001REC was constructed by summing the valid values across the twenty items (see Note for additional details in the scoring method). Items MU006RER, MU009RER, MU016RER and MU018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .90$

Note: Some respondents answered the first few questions yet did not complete subsequent items. If these respondents answered at least ten questions, then a sum has been computed. Other respondents answered questions scattered throughout this section of the questionnaire and left the remainder of the questions blank. It was assumed that these respondents only answered the questions that applied to them. If at least three items of the questions that comprise this scale were answered and all items answered received a nonzero response, then a sum was computed for MU001REC using zero as the score for unanswered questions.

MU002RE: number of depression/psychological distress items answered
= 0 if no depression/psychological distress questions answered
= 1- 20 if one to twenty questions answered

Note: For those respondents who answered at least three items with nonzero responses (that is, for whom a sum for MU001REC was calculated; see above), MU002RE is coded as “20”.

2003-2005 Graduate Respondent Mail Questionnaire

Psychological Distress /Depressive Symptoms (CES-D)

IU001REC: continuous variable based on 20 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IU003RER (q1fw_a), IU004RER (q1fw_b), IU005RER (q1fw_c), IU006RER (q1fw_d), IU007RER (q1fw_e), IU008RER (q1fw_f), IU009RER (q1fw_g), IU010RER (q1fw_h), IU011RER (q1fw_i), IU012RER (q1fw_j), IU013RER (q1fw_k), IU014RER (q1fw_l), IU015RER (q1fw_m), IU016RER (q1fw_n), IU017RER (q1fw_o), IU018RER (q1fw_p), IU019RER (q1fw_q), IU020RER (q1fw_r), IU021RER (q1fw_s), IU022RER (q1fw_t)

Circle the number of days in the past week you experienced each feeling.

IU003RER. “feel you could not shake off the blues even with help from your family and friends?”

IU004RER. “feel bothered by things that usually don’t bother you?”

Center for Epidemiological Studies Depression Scale (CES-D)
2003-2005 Graduate Respondent Mail Questionnaire

- IU005RER. “think your life had been a failure?”
- IU006RER. “feel happy?”
- IU007RER. “feel that people were unfriendly?”
- IU008RER. “feel lonely?”
- IU009RER. “enjoy life?”
- IU010RER. “have crying spells?”
- IU011RER. “feel the people disliked you?”
- IU012RER. “feel sad?”
- IU013RER. “feel depressed?”
- IU014RER. “have trouble keeping your mind on what you were doing?”
- IU015RER. “not feel like eating, your appetite was poor?”
- IU016RER. “feel you were just as good as other people?”
- IU017RER. “feel everything you did was an effort?”
- IU018RER. “feel hopeful about the future?”
- IU019RER. “feel fearful?”
- IU020RER. “sleep restlessly?”
- IU021RER. “talk less than usual?”
- IU022RER. “feel you could not ‘get going’?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused.

Scaling: IU001REC was constructed by summing the valid values across the twenty items (see Note for additional details in the scoring method). Items IU006RER, IU009RER, IU016RER and IU018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .88$

Note: Some respondents answered the first few questions yet did not complete subsequent items. If these respondents answered at least ten questions, then a sum was computed. Other respondents answered questions scattered throughout this section of the questionnaire and left the remainder of the questions blank. It was assumed that these respondents only answered the questions that applied to them. If at least three items of the questions that comprise this scale were answered and all items answered received a nonzero response, then a sum was computed for IU001REC using zero as the score for unanswered questions; these unanswered items were counted as answered items in IU002RE.

IU002RE: number of depression/psychological distress items answered
= 0 if no depression/psychological distress questions answered
= 1- 20 if one to twenty questions answered

Center for Epidemiological Studies Depression Scale (CES-D)
2003-2005 Graduate Respondent Mail Questionnaire

Note: For those respondents who answered at least three items, all with nonzero responses (that is, for whom a sum for IU001REC was calculated; see above), IU002RE is coded as “20”.

1993-1994 Sibling Respondent Mail Questionnaire

Psychological Distress /Depressive Symptoms (CES-D)

NU001REC: continuous variable based on 20 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NU003RER (40a), NU004RER (40b), NU005RER (40c), NU006RER (40d), NU007RER (40e), NU008RER (40f), NU009RER (40g), NU010RER (40h), NU011RER (40i), NU012RER (40j), NU013RER (40k), NU014RER (40l), NU015RER (40m), NU016RER (40n), NU017RER (40o), NU018RER (40p), NU019RER (40q), NU020RER (40r), NU021RER (40s), NU022RER (40t)

On how many days during the past week did you

NU003RER. “feel you could not shake off the blues even with help from your family and friends?”

NU004RER. “feel bothered by things that don’t usually bother you?”

NU005RER. “think your life had been a failure?”

NU006RER. “feel happy?”

NU007RER. “feel that people were unfriendly?”

NU008RER. “feel lonely?”

NU009RER. “enjoy life?”

NU010RER. “have crying spells?”

NU011RER. “feel that people disliked you?”

NU012RER. “feel sad?”

NU013RER. “feel depressed?”

NU014RER. “have trouble keeping your mind on what you were doing?”

NU015RER. “not feel like eating, your appetite was poor?”

NU016RER. “feel you were just as good as other people?”

NU017RER. “feel everything you did was an effort?”

NU018RER. “feel hopeful about the future?”

NU019RER. “feel fearful?”

NU020RER. “sleep restlessly?”

NU021RER. “talk less than usual?”

NU022RER. “feel you could not ‘get going’?”

Center for Epidemiological Studies Depression Scale (CES-D)
1993-1994 Sibling Respondent Mail Questionnaire

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused

Scaling: NU001REC was constructed by summing the valid values across the twenty items if at least ten items received a valid response. NU006RER, NU009RER, NU016RER and NU018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .90$

NU002RE: number of depression/psychological distress items answered
= 0 if no depression/psychological distress items answered
= 1-7 if one to seven items answered
= 10-20 if ten to twenty items answered

2004-2007 Sibling Respondent Mail Questionnaire

Psychological Distress /Depressive Symptoms (CES-D)

DU001REC: continuous variable based on 20 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DU003RER (q1fw_a), DU004RER (q1fw_b), DU005RER (q1fw_c), DU006RER (q1fw_d), DU007RER (q1fw_e), DU008RER (q1fw_f), DU009RER (q1fw_g), DU010RER (q1fw_h), DU011RER (q1fw_i), DU012RER (q1fw_j), DDU013RER (q1fw_k), DU014RER (q1fw_l), DU015RER (q1fw_m), DU016RER (q1fw_n), DU017RER (q1fw_o), DU018RER (q1fw_p), DU019RER (q1fw_q), DU020RER (q1fw_r), DU021RER (q1fw_s), DU022RER (q1fw_t)

On how many days during the past week did you

DU003RER. "feel you could not shake off the blues even with help from your family and friends?"

DU004RER. "feel bothered by things that don't usually bother you?"

DU005RER. "think your life had been a failure?"

DU006RER. "feel happy?"

DU007RER. "feel that people were unfriendly?"

DU008RER. "feel lonely?"

DU009RER. "enjoy life?"

DU010RER. "have crying spells?"

DU011RER. "feel that people disliked you?"

DU012RER. "feel sad?"

Center for Epidemiological Studies Depression Scale (CES-D)
2004-2007 Sibling Respondent Mail Questionnaire

- DU013RER. “feel depressed?”
- DU014RER. “have trouble keeping your mind on what you were doing?”
- DU015RER. “not feel like eating or your appetite was poor?”
- DU016RER. “feel you were just as good as other people?”
- DU017RER. “feel everything you did was an effort?”
- DU018RER. “feel hopeful about the future?”
- DU019RER. “feel fearful?”
- DU020RER. “sleep restlessly?”
- DU021RER. “talk less than usual?”
- DU022RER. “feel you could not ‘get going’?”

Coding: 0 zero day; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused

Scaling: DU001REC was constructed by summing the valid values across the twenty items (see Note for additional details in the scoring method). DU006RER, DU009RER, DU016RER and DU018RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .90$

Note: Some respondents answered the first few questions yet did not complete subsequent items. If these respondents answered at least ten questions, then a sum was computed. Other respondents answered questions scattered throughout this section of the questionnaire and left the remainder of the questions blank. It was assumed that these respondents only answered the questions that applied to them. If at least three items of the questions that comprise this scale were answered and all items answered received a nonzero response, then a sum was computed for DU001REC using zero as the score for unanswered questions; these unanswered items were counted as answered items in DU002RE.

DU002RE: number of depression/psychological distress items answered
= 0 if no depression/psychological distress items answered
= 1-20 if one to twenty items answered

Source

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for researching the general population. *Applied Psychological Measurement*, 1, 385-401.

Selected Studies Using CESD Scale

Carr, D. (1997). The fulfillment of career dreams at midlife: Does it matter for women's mental health? *Journal of Health & Social Behavior*, 38(4), 331-344.

Carr, D. (2002). Socioeconomic background and midlife health in the United States. In S. Crystal, & D. Shea (Eds.), *Annual review of gerontology and geriatrics, volume 22: Economic outcomes in later life: Public policy, health, and cumulative advantage*. (pp. 155-183). New York, NY: Springer.

MacLean, A., & Hauser R. M. (2004). Socioeconomic status and depression among adult siblings. Center for Demography and Ecology (CDE) Working Paper 2000-04. University of Wisconsin-Madison.

Marks, N.F. (1996). Flying solo at midlife: Gender, marital status, and psychological well being. *Journal of Marriage & the Family*, 58, 917-932.

Seltzer, M. M., J. S. Greenberg, F. J. Floyd, Y. Pettee, and J. Hong. 2001. "Life Course Impacts of Parenting a Child With a Disability." *American Journal on Mental Retardation* 106:265-286.

Springer, Kristen W., Sheridan, Jennifer, Kuo, Daphne, Carnes, Molly. 2007. "Long-Term Physical and Mental Health Consequences of Childhood Physical Abuse: Results from a Large Population-Based Sample of Men and Women." *Child Abuse and Neglect* 31:517-530.

Depression History

1992-1993 Graduate Respondent Telephone Interview

A 79% random sample was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 1992-3 Graduate Respondent Telephone Interviews (RU001RE). If RU001RE = 0, the respondent was not in this 79% sample; if RU001RE = 1, the respondent was in the 79% sample. The depression questions were only asked of those respondents who were selected to the 79% random sample.

The respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt depressed (RU002RE). If RU002RE = 2, the respondent has never had an episode of depression; if RU002RE = 1, the respondent has had at least one episode of depression. The cause of depression (RU003RE) was only asked of those respondents for whom RU002RE = 1.

The respondent was asked whether his/her experience with depression was always caused by alcohol, drugs, medications or physical illness (RU003RE). If RU003RE = 1, the respondent's depression was always caused by alcohol, drugs, medications or physical illness; if RU003RE = 2, the respondent's depression was sometimes caused by alcohol, drugs, medications or physical illness; if RU003RE = 3, the respondent's depression was never caused by alcohol, drugs, medications or physical illness. The depression symptoms were only asked of those respondents for whom RU003RE = 2 or 3.

Depression Symptoms Count

RU024REC: continuous variable based on 7 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RU006RE (870a), RU007RE (870b), RU008RE (870c), RU009RE (870d), RE010RE (870e), RU011RE (870f), RU012RE (870g)

- RU006RE. "During this episode of depression, did the respondent lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?"
- RU007RE. "Did respondent have two weeks or more when nearly every night (he/she) had trouble falling asleep?"
- RU008RE. "Did respondent have two weeks or more when (he/she) lacked energy or felt tired all the time, even when (he/she) had not been working very hard?"
- RU009RE. "Did respondent have two weeks or more when (he/she) felt very bad when waking up, but felt better later in the day?"

Depression History (Depression Symptoms Count)
1992-1993 Graduate Respondent Telephone Interview

RU010RE. “Did respondent have two weeks or more when (he/she) lost interest in most things like work, hobbies, or things (he/she) usually liked to do for fun?”

RU011RE. “Did respondent have two weeks or more when nearly every day (he/she) had a lot more trouble concentrating than normal?”

RU012RE. “Did respondent have two weeks or more when (he/she) thought a lot about death – either (his/her) own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (RU001RE = 0 or RU002RE = 2 or RU003RE = 1); -3 refused/not ascertained.

Reliability: Kuder-Richardson Coef. (KR-20) = .94²

Scaling: RU024REC was constructed by summing the number of “yes” responses across the 7 items if at least 4 items received a valid response. The variable is coded -3 if there are fewer than 4 items with valid response. The variable is coded -2 if respondent was not in the sample (RU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (RU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (RU002RE = 2).

RU024RE: number of depression items answered

= 0 if no depression items answered

= 1-7 if one to seven items answered

= -2 if inappropriate (RU001RE = 0 or RU002RE=2 or RU003RE = 1)

² The coefficient was calculated based on recoded items. All 7 items were recoded to missing if RU024REC=-3 and to 0 if RU024REC=0 before the calculation of the reliability.

2003-2005 Graduate Respondent Telephone Interview

The same 79% sample asked in 1992-1993 was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2003-5 Graduate Respondent Telephone Interviews (GU001RE). If GU001RE = 0, the respondent was not in the sample; if GU001RE = 1, the respondent was in the sample. The depression questions were only asked of those respondents who were selected to the random sample.

The sampled respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt depressed (GU002RE). If GU002RE = 2, the respondent has never had an episode of depression; if GU002RE = 1, the respondent has had at least one episode of depression. The cause of depression (GU003RE) was only asked of those respondents for whom GU002RE = 1.

The eligible respondent was then asked whether his/her experience with depression was always caused by alcohol, drugs, medications or physical illness (GU003RE). If GU003RE = 1, the respondent's depression was always caused by alcohol, drugs, medications or physical illness; if GU003RE = 2, the respondent's depression was sometimes caused by alcohol, drugs, medications or physical illness; if GU003RE = 3, the respondent's depression was never caused by alcohol, drugs, medications or physical illness. The depression symptoms were only asked of those respondents for whom GU003RE = 2 or 3.

Depression Symptoms Count

GU024RE: continuous variable based on 7 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GU006RE (u870a), GU007RE (u870b), GU008RE (u870c), GU009RE (u870d), GU010RE (u870e), GU011RE (u870f), GU012RE (u870g)

During your worst, particularly bad, or most recent episode of depression,

GU006RE. "did you lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?"

GU007RE. "did you have two weeks or more when nearly every night you had trouble falling asleep?"

GU008RE. "did you have two weeks or more when you lacked energy or felt tired all the time, even when you had not been working very hard?"

GU009RE. "did you have two weeks or more when you felt very bad when waking up, but felt better later in the day?"

Depression History (Depression Symptoms Count)
2003-2005 Graduate Respondent Telephone Interview

GU010RE. “did you have two weeks or more when you lost interest in most things like work, hobbies, or things you usually liked to do for fun?”

GU011RE. “did you have two weeks or more when nearly every day you had a lot more trouble concentrating than normal?”

GU012RE. “did you have two weeks or more when you thought a lot about death – either you own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (GU001RE = 0 or GU002RE = 2 or GU003RE = 1); -3 refused; -5 partial interview.

Reliability: Kuder-Richardson Coef. (KR-20) = .93³

Scaling: GU024RE was constructed by summing the number of “yes” responses across the 7 items if at least 4 items received a valid response. The variable is coded -3 if there are fewer than 4 items with valid response. The variable is coded -2 if respondent was not in the sample (GU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (GU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (GU002RE = 2).

GUA24RE: number of depression items answered

= 0 if no depression items answered

= 1-7 if one to seven items answered

= -2 if inappropriate (GU001RE = 0 or GU002RE=2 or GU003RE = 1)

= -5 partial interview

³ The coefficient was calculated based on recoded items. All 7 items were recoded to missing if GU024RE=-3 and to 0 if GU024RE=0 before the calculation of the reliability.

1993-1994 Sibling Respondent Telephone Interview

An 80% random sample was selected to be asked depression and alcohol symptoms questions in the 1993-4 Sibling Respondent Telephone Interviews. If SU001RE = 0, the respondent was not in this 80% sample; if SU001RE = 1, the respondent was a part of the 80% sample.

The respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt sad, blue, depressed or when he/she lost interest in most things like work, hobbies or things he/she usually liked to do for fun. If SU002RE = 1, the respondent answered “yes,” that he/she has had an episode of depression; if SU002RE = 2, the respondent answered “no,” that he/she has not had an episode of depression. SU024REC includes only those respondents for whom SU002RE = 1.

The respondent was asked if his/her experience with depression was always caused by alcohol, drugs, medications or physical illness. If SU003RE = 1, the respondent answered “yes”; if SU003RE = 2, the respondent answered “sometimes”; if SU003RE = 3, the respondent answered “no.” SU024REC includes only those respondents for whom SU003RE = 2 or 3.

Depression Symptoms Count

SU024REC: continuous variable based on 7 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SU006RE (870a, RU006RE), SU007RE (870b, RU007RE), SU008RE (870c, RU008RE), SU009RE (870d, RU009RE), SU010RE (870e, RU010RE), SU011RE (870f, RU011RE), SU012RE (870g, RU012RE)

- SU006RE. “During this episode of depression, did the respondent lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?”
- SU007RE. “Did respondent have two weeks or more when nearly every night (he/she) had trouble falling asleep?”
- SU008RE. “Did respondent have two weeks or more when (he/she) lacked energy or felt tired all the time, even when (he/she) had not been working very hard?”
- SU009RE. “Did respondent have two weeks or more when (he/she) felt very bad when waking up, but felt better later in the day?”
- SU010RE. “Did respondent have two weeks or more when (he/she) lost interest in most things like work, hobbies, or things (he/she) usually liked to do for fun?”

Depression History (Depression Symptoms Count)
1993-1994 Sibling Respondent Telephone Interview

SU011RE. “Did respondent have two weeks or more when nearly every day (he/she) had a lot more trouble concentrating than is normal?”

SU012RE. “Did respondent have two weeks or more when (he/she) thought a lot about death – either (his/her) own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (SU001RE = 0 or SU002RE = 2 or SU003RE = 1); -3 refused/not ascertained

Scaling: SU024REC was constructed by counting the number of “yes” responses across the 7 items if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses. The variable is coded -2 if respondent was not in the sample (SU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (SU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (SU002RE = 2).

Reliability: Kuder-Richardson Coef. (KR-20) = .93⁴

Notes: SU024REC is a constructed variable based on variables SU006RE, SU007RE, SU008RE, SU009RE, SU010RE, SU011RE, SU012RE and SU024REC. SU006RE is a constructed variable based on questions 870a and RU006RE. SU007RE is a constructed variable based on questions 870b and RU007RE. SU008RE is a constructed variable based on questions 870c and RU008RE. SU009RE is a constructed variable based on questions 870d and RU009RE. SU010RE is a constructed variable based on questions 870e and RU010RE. SU011RE is a constructed variable based on questions 870f and RU011RE. SU012RE is a constructed variable based on questions 870g and RU012RE.

SUA24RE: number of depression items answered
= 0 if no depression items answered
= 1-7 if one to seven items answered
= -2 if inappropriate (SU001RE = 0 or SU002RE=2 or SU003RE = 1)

⁴ The coefficient was calculated based on recoded items. All 7 items were recoded to missing if SU024REC=-3 and to 0 if SU024REC=0 before the calculation of the reliability.

2004-2007 Sibling Respondent Telephone Interview

The same 79% sample asked in 1992-1993 was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2004-7 Sibling Respondent Telephone Interview (CU001RE). If CU001RE = 0, the respondent was not in the sample; if CU001RE = 1, the respondent was in the sample. The depression questions were only asked of those respondents who were selected to the random sample.

The sampled respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt depressed (CU002RE). If CU002RE = 2, the respondent has never had an episode of depression; if CU002RE = 1, the respondent has had at least one episode of depression. The cause of depression (CU003RE) was only asked of those respondents for whom CU002RE = 1.

The eligible respondent was then asked whether his/her experience with depression was always caused by alcohol, drugs, medications or physical illness (CU003RE). If CU003RE = 1, the respondent's depression was always caused by alcohol, drugs, medications or physical illness; if CU003RE = 2, the respondent's depression was sometimes caused by alcohol, drugs, medications or physical illness; if CU003RE = 3, the respondent's depression was never caused by alcohol, drugs, medications or physical illness. The depression symptoms were only asked of those respondents for whom CU003RE = 2 or 3.

Depression Symptoms Count

CU024RE: continuous variable based on 7 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions CU006RE (u870a), CU007RE (u870b), CU008RE (u870c), CU009RE (u870d), CE010RE (u870e), CU011RE (u870f), CU012RE (u870g)

During your worst, particularly bad, or most recent episode of depression,

CU006RE. "did you lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?"

CU007RE. "did you have two weeks or more when nearly every night you had trouble falling asleep?"

CU008RE. "did you have two weeks or more when you lacked energy or felt tired all the time, even when you had not been working very hard?"

CU009RE. "did you have two weeks or more when you felt very bad when waking up, but felt better later in the day?"

Depression History (Depression Symptoms Count)
2004-2007 Sibling Respondent Telephone Interview

CU010RE. “did you have two weeks or more when you lost interest in most things like work, hobbies, or things you usually liked to do for fun?”

CU011RE. “did you have two weeks or more when nearly every day you had a lot more trouble concentrating than normal?”

CU012RE. “did you have two weeks or more when you thought a lot about death – either you own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (CU001RE = 0 or CU002RE = 2 or CU003RE = 1); -3 refused; -5 partial interview.

Reliability: Kuder-Richardson Coef. (KR-20) = .92⁵

Scaling: CU024RE was constructed by summing the “yes” responses across the 7 items if at least 4 items received a valid response. The variable is coded -3 if there are fewer than 4 items with valid response. The variable is coded -2 if respondent was not in the sample (CU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (CU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (CU002RE = 2).

GUA24RE: number of depression items answered

= 0 if no depression items answered

= 1-7 if one to seven items answered

= -2 if inappropriate (GU001RE = 0 or GU002RE=2 or GU003RE = 1)

= -5 partial interview

⁵ The coefficient was calculated based on recoded items. All 7 items were recoded to missing if CU024RE=-3 and to 0 if CU024RE=0 before the calculation of the reliability.

2003-2005 Graduate Spouse Respondent Telephone Interview

Eighty percent of the graduate spouse sample was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2003-5 Graduate Spouse Telephone Interviews (AU001RE). If AU001RE = 0, the respondent was not in the sample; if AU001RE = 1, the respondent was in the sample. The depression questions were only asked of those respondents who were selected to the random sample.

The sampled respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt depressed (AU002RE). If AU002RE = 2, the respondent has never had an episode of depression; if AU002RE = 1, the respondent has had at least one episode of depression. The cause of depression (AU003RE) was only asked of those respondents for whom AU002RE = 1.

The eligible respondent was then asked whether his/her experience with depression was always caused by alcohol, drugs, medications or physical illness (AU003RE). If AU003RE = 1, the respondent's depression was always caused by alcohol, drugs, medications or physical illness; if AU003RE = 2, the respondent's depression was sometimes caused by alcohol, drugs, medications or physical illness; if AU003RE = 3, the respondent's depression was never caused by alcohol, drugs, medications or physical illness. The depression symptoms were only asked of those respondents for whom AU003RE = 2 or 3.

Depression Symptoms Count

AU024RE: continuous variable based on 7 items

Items: 2004 Graduate Spouse Telephone Interview, Questions AU006RE (h_u160), AU007RE (h_u170), AU008RE (h_u180), AU009RE (h_u190), AU010RE (h_u200), AU011RE (h_u210), AU012RE (h_u220)

During your worst, particularly bad, or most recent episode of depression,

AU006RE. "did you lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?"

AU007RE. "did you have two weeks or more when nearly every night you had trouble falling asleep?"

AU008RE. "did you have two weeks or more when you lacked energy or felt tired all the time, even when you had not been working very hard?"

Depression History (Depression Symptoms Count)
2003-2005 Graduate Spouse Respondent Telephone Interview

AU009RE. “did you have two weeks or more when you felt very bad when waking up, but felt better later in the day?”

AU010RE. “did you have two weeks or more when you lost interest in most things like work, hobbies, or things you usually liked to do for fun?”

AU011RE. “did you have two weeks or more when nearly every day you had a lot more trouble concentrating than normal?”

AU012RE. “did you have two weeks or more when you thought a lot about death – either you own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (AU001RE = 0 or AU002RE = 2 or AU003RE = 1); -3 refused; -5 partial interview.

Reliability: Kuder-Richardson Coef. (KR-20) = .91⁶

Scaling: AU024RE was constructed by summing the “yes” responses across the 7 items if at least 4 items received a valid response. The variable is coded -3 if there are fewer than 4 items with valid response. The variable is coded -2 if respondent was not in the sample (AU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (AU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (AU002RE = 2).

AUA24RE: number of depression items answered

= 0 if no depression items answered

= 1-7 if one to seven items answered

= -2 if inappropriate (AU001RE = 0 or AU002RE=2 or AU003RE = 1)

= -5 partial interview

⁶ The coefficient was calculated based on recoded items. All 7 items were recoded to missing if AU024RE=-3 and to 0 if AU024RE=0 before the calculation of the reliability.

2005 Sibling Spouse Respondent Telephone Interview

Eighty percent of the sibling spouse sample was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2005 Sibling Spouse Telephone Interviews (BU001RE). If BU001RE = 0, the respondent was not in the sample; if BU001RE = 1, the respondent was in the sample. The depression questions were only asked of those respondents who were selected to the random sample.

The sampled respondent was asked whether he/she had ever had a time in his/her life lasting two weeks or more when nearly every day he/she felt depressed (AU002RE). If BU002RE = 2, the respondent has never had an episode of depression; if BU002RE = 1, the respondent has had at least one episode of depression. The cause of depression (BU003RE) was only asked of those respondents for whom BU002RE = 1.

The eligible respondent was then asked whether his/her experience with depression was always caused by alcohol, drugs, medications or physical illness (BU003RE). If BU003RE = 1, the respondent's depression was always caused by alcohol, drugs, medications or physical illness; if BU003RE = 2, the respondent's depression was sometimes caused by alcohol, drugs, medications or physical illness; if BU003RE = 3, the respondent's depression was never caused by alcohol, drugs, medications or physical illness. The depression symptoms were only asked of those respondents for whom BU003RE = 2 or 3.

Depression Symptoms Count

BU024RE: continuous variable based on 7 items

Items: 2005 Sibling Spouse Telephone Interview, Questions BU006RE (h_u160), BU007RE (h_u170), BU008RE (h_u180), BU009RE (h_u190), BU010RE (h_u200), BU011RE (h_u210), BU012RE (h_u220)

During your worst, particularly bad, or most recent episode of depression,

BU006RE. "did you lose weight without trying to – as much as 2 pounds a week for several weeks or as much as 10 pounds altogether?"

BU007RE. "did you have two weeks or more when nearly every night you had trouble falling asleep?"

BU008RE. "did you have two weeks or more when you lacked energy or felt tired all the time, even when you had not been working very hard?"

BU009RE. "did you have two weeks or more when you felt very bad when waking up, but felt better later in the day?"

Depression History (Depression Symptoms Count)
2005 Sibling Spouse Respondent Telephone Interview

BU010RE. “did you have two weeks or more when you lost interest in most things like work, hobbies, or things you usually liked to do for fun?”

BU011RE. “did you have two weeks or more when nearly every day you had a lot more trouble concentrating than normal?”

BU012RE. “did you have two weeks or more when you thought a lot about death – either you own, someone else’s, or death in general?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (BU001RE = 0 or BU002RE = 2 or BU003RE = 1); -3 refused; -5 partial interview.

Reliability: Kuder-Richardson Coef. (KR-20) = .92⁷

Scaling: BU024RE was constructed by summing the “yes” responses across the 7 items if at least 4 items received a valid response. The variable is coded -3 if there are fewer than 4 items with valid response. The variable is coded -2 if respondent was not in the sample (BU001RE = 0) or the depression was always caused by alcohol, drugs, medications, or physical illness (BU003RE = 1). The variable is coded 0 if the respondent had never had an episode of depression (BU002RE = 2).

BUA24RE: number of depression items answered

= 0 if no depression items answered

= 1-7 if one to seven items answered

= -2 if inappropriate (BU001RE = 0 or BU002RE=2 or BU003RE = 1)

= -5 partial interview

⁷ The coefficient was calculated based on recoded items. All 7 items were recoded to missing if BU024RE=-3 and to 0 if BU024RE=0 before the calculation of the reliability.

Source

TK

Selected Studies Using Depression Symptoms Count

Carr, D. (1997). The fulfillment of career dreams at midlife: Does it matter for women's mental health? *Journal of Health & Social Behavior*, 38(4), 331-344.

Singer, B. H., Ryff, C. D., Carr, D., & Magee, W. (1998). Linking life histories and mental health: A person-centered strategy. *Sociological Methodology*, 28, 1-51.

Alcohol Symptoms

1992-1993 Graduate Respondent Mail Questionnaire

Alcohol Symptoms: not available

1992-1993 Graduate Respondent Telephone Interview

A 79% random sample was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 1992-3 Graduate Respondent Telephone Interviews (RU001RE). If RU001RE = 0, the respondent was not in this 79% sample; if RU001RE = 1, the respondent was in the 79% sample. RU034REC includes only those respondents who were selected to the 79% random sample.

Respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor or mixed alcoholic drinks. If RU025RE = 1, the respondent answered “yes,” he/she has drunk alcoholic beverages; if RU025RE = 2, the respondent answered “no,” he/she has never drunk alcoholic beverages. If respondent has never drunk alcohol (RU025RE = 2), then RU034REC is coded 0.

Alcohol Symptoms Count

RU034REC: continuous variable based on 5 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RU030RE (876), RU031RE (876f), RU032RE (876m), RU033RE (876s), RU035RE (878) and RU036RE (878a)

RU030RE. “Has respondent ever felt bad or guilty about drinking?”

RU031RE. “Have people ever annoyed respondent by criticizing respondent’s drinking?”

RU032RE. “Has respondent’s drinking ever caused a problem at work?”

RU033RE. “Has respondent’s drinking ever created problems between respondent and spouse, children, parents, or other near relatives?”

RU035RE. “Has respondent ever gone to anyone for help about drinking?”

RU036RE. “If respondent has ever gone to anyone for help about drinking, was that about respondent’s own drinking or someone else’s drinking?”

Alcohol Symptoms 1992-1993 Graduate Respondent Telephone Interview

Coding: For RU030RE to RU035RE: 1 yes; 2 no; -1 don't know; -2 inappropriate (RU001RE = 0 or RU025RE = 2); -3 refused/not ascertained. For RU036RE: 1 respondent; 2 someone else; 3 respondent and someone else; -1 don't know; -2 inappropriate (RU035RE not = 1).

Scaling: RU034REC was constructed by summing the number of "yes" responses across the five items if at least three items received a valid response. RU035RE and RU036RE are used to identify one symptom, which is whether the respondent had ever gone to anyone for his/her own drinking (RU035RE=1 & RU036RE=1 or 3). RU034REC is coded -3 if there are fewer than three valid responses. If the respondent is not in the random sample (RU001RE=0), the variable is coded -2. If the respondent had never drunk alcoholic beverages (RU025RE=2), RU034REC is coded 0.

Reliability: Kuder-Richardson Coef. (KR-20) = .72

Notes: RU034REC is a constructed variable based on questions 876, 876f, 876m, 876s, 878 and 878a.

RU034RE: number of alcohol items answered
= 0 if no alcohol items answered
= 1-5 if one to five items answered
= -2 if inappropriate (RU001RE = 0 or RU025RE = 2)

2003-2005 Graduate Respondent Mail Questionnaire

Alcohol Symptoms: not available

2003-2005 Graduate Respondent Telephone Interview

The same 79% sample asked in 1992-1993 was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2003-5 Graduate Respondent Telephone Interviews (GU001RE). If GU001RE = 0, the respondent was not in the sample; if GU001RE = 1, the respondent was in the sample. GU034REC includes only those respondents who were selected to the 79% random sample.

Sampled respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor or mixed alcoholic drinks (GU025RE). If GU025RE = 1, the respondent answered "yes," he/she has drunk alcoholic beverages; if GU025RE = 2, the respondent answered "no,"

Alcohol Symptoms
2003-2005 Graduate Respondent Telephone Interview

he/she has never drunk alcoholic beverages. If respondent has never drunk alcohol (GU025RE = 2), then GU034REC is coded 0.

Alcohol Symptoms Count

GU034REC: continuous variable based on 5 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GU030RE (u6), GU031RE (u7), GU032RE (u8), GU033RE (u9), GU035RE (u10) and GU036RE (u11)

GU030RE. "At any time in your life have you felt bad or guilty about drinking?"

GU031RE. "At any time in your life have people annoyed you by criticizing your drinking?"

GU032RE. "Has your drinking caused a problem for you at work?"

GU033RE. "Has your drinking created problems between you/you're your spouse, children, parents, or other near relatives?"

GU035RE. "Have you gone to anyone for help about drinking, that is, about your drinking or anyone else's?"

GU036RE. "Was that about your drinking or someone else's drinking?" (If respondent has gone to anyone for help about drinking).

Coding: For GU030RE to GU035RE: 1 yes; 2 no; -1 don't know; -2 inappropriate (GU001RE = 0 or GU025RE = 2); -3 refused; -5 partial interview. For GU036RE: 1 respondent; 2 someone else; 3 respondent and someone else; -1 don't know; -2 inappropriate (GU001RE = 0 or GU025RE = 2 or GU035RE not = 1).

Scaling: GU034REC was constructed by summing the number of "yes" responses across the five items if at least three items received a valid response. GU035RE and GU036RE are used to identify one symptom -- whether the respondent had ever gone to anyone for his/her own drinking (GU035RE=1 & GU036RE=1 or 3). GU034REC is coded -3 if there are fewer than three valid responses. If the respondent is not in the random sample (GU001RE=0), the variable is coded -2. If the respondent had never drunk alcoholic beverages (GU025RE=2), GU034RE is coded 0.

Reliability: Kuder-Richardson Coef. (KR-20) = .70

GUA34RE: number of alcohol items answered

= 0 if no alcohol items answered

= 1-5 if one to five items answered

= -2 if inappropriate (GU001RE = 0 or GU025RE = 2)

= -5 partial interview

1993-1994 Sibling Respondent Mail Questionnaire

Alcohol Symptoms: not available

1993-1994 Sibling Respondent Telephone Interview

An 80% random sample was selected to be asked depression and alcohol symptoms questions in the 1993-4 Sibling Respondent Telephone Interviews. If SU001RE = 0, the respondent was not in this 80% sample; if SU001RE = 1, the respondent was a part of the 80% sample.

Respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor, or mixed alcoholic drinks. If SU025RE = 1, the respondent answered “yes,” he/she has drunk alcoholic beverages; if SU025RE = 2, the respondent answered “no,” he/she has never drunk alcoholic beverages. SU034REC includes only those respondents for whom SU025RE = 1.

Alcohol Symptoms Count

SU034REC: continuous variable based on 5 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SU030RE (876, RU030RE), SU031RE (876f, RU031RE), SU032RE (876m, RU032RE), SU033RE (876s, RU033RE), SU035RE (878, RU035RE), SU036RE(878a, RU036RE)

SU030RE. “Has respondent ever felt bad or guilty about drinking?”

SU031RE. “Have people ever annoyed respondent by criticizing respondent’s drinking?”

SU032RE. “Has respondent’s drinking ever caused a problem at work?”

SU033RE. “Has respondent’s drinking ever created problems between respondent and spouse, children, parents, or other near relatives?”

SU035RE. “Has respondent ever gone to anyone for help about drinking?”

SU036RE. “If respondent has ever gone to anyone for help about drinking, was that about respondent’s own drinking or someone else’s drinking?”

Coding: for SU030RE to SU035RE: 1 yes; 2 no; -1 don’t know; -2 inappropriate (SU001RE = 0 or SU025RE =2); -3 refused/not ascertained. For SU036RE: 1 respondent; 2 someone else; 3 respondent and someone else; -1 don’t know; -2 inappropriate (SU035RE not = 1).

Scaling: SU034REC was constructed by counting the number of “yes” responses across the five items if at least three items received a valid response. SU035RE and RU036RE

Alcohol Symptoms 1993-1994 Sibling Respondent Telephone Interview

are used to identify one symptom, which is whether the respondent had ever gone to anyone for his/her own drinking (SU035RE=1 & SU036RE=1 or 3). SU034REC is coded -3 if there are fewer than three valid responses. If the respondent is not in the 80% random sample (SU001RE=0), or had never drunk alcoholic beverages (SU025RE=2), the variable is coded -2.

Reliability: Kuder-Richardson Coef. (KR-20) = .72

Notes: SU034REC is a constructed variable based on questions 876, 876f, 876m, 876s, 878, 878a, RU034REC. SU030RE is a constructed variable based on questions 876 and RU030RE. SU031RE is a constructed variable based on questions 876f and RU031RE. SU032RE is a constructed variable based on questions 876m and RU032RE. SU033RE is a constructed variable based on questions 876s and RU033RE. SU035RE is a constructed variable based on questions 878 and RU035RE. SU036RE is a constructed variable based on question 878a and RU036RE.

2004-2007 Sibling Respondent Mail Questionnaire

Alcohol Symptoms: not available

2004-2007 Sibling Respondent Telephone Interview

The same 79% sample asked in 1992-1993 was selected to be asked depression, depression history and drinking problems/alcohol symptoms questions in the 2003-5 Sibling Telephone Interviews (CU001RE). If CU001RE = 0, the respondent was not in the sample; if CU001RE = 1, the respondent was in the sample. CU034REC includes only those respondents who were selected to the 79% random sample.

Sampled respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor or mixed alcoholic drinks (CU025RE). If CU025RE = 1, the respondent answered "yes," he/she has drunk alcoholic beverages; if CU025RE = 2, the respondent answered "no," he/she has never drunk alcoholic beverages, in which case, CU034REC is coded 0.

Alcohol Symptoms Count

CU034REC: continuous variable based on 5 items

Alcohol Symptoms
2004-2007 Sibling Respondent Telephone Interview

Items: 2003-5 Graduate Respondent Telephone Interview, Questions CU030RE (u6), CU031RE (u7), CU032RE (u8), CU033RE (u9), CU035RE (u10) and CU036RE (u11)

- CU030RE. "At any time in your life have you felt bad or guilty about drinking?"
CU031RE. "At any time in your life have people annoyed you by criticizing your drinking?"
CU032RE. "Has your drinking caused a problem for you at work?"
CU033RE. "Has your drinking created problems between you/you're your spouse, children, parents, or other near relatives?"
CU035RE. "Have you gone to anyone for help about drinking, that is, about your drinking or anyone else's?"
CU036RE. "Was that about your drinking or someone else's drinking?" (If respondent has gone to anyone for help about drinking).

Coding: For CU030RE to CU035RE: 1 yes; 2 no; -1 don't know; -2 inappropriate (CU001RE = 0 or CU025RE = 2); -3 refused; -5 partial interview. For CU036RE: 1 respondent; 2 someone else; 3 respondent and someone else; -1 don't know; -2 inappropriate (CU001RE = 0 or CU025RE = 2 or CU035RE not = 1).

Scaling: CU034REC was constructed by summing the number of "yes" responses across the five items if at least three items received a valid response. CU035RE and CU036RE are used to identify one symptom -- whether the respondent had ever gone to anyone for his/her own drinking (CU035RE=1 & CU036RE=1 or 3). CU034REC is coded -3 if there are fewer than three valid responses. If the respondent is not in the random sample (CU001RE=0), the variable is coded -2. If the respondent had never drunk alcoholic beverages (CU025RE=2), CU034RE is coded 0.

Reliability: Kuder-Richardson Coef. (KR-20) = .70

CUA34RE: number of alcohol items answered
= 0 if no alcohol items answered
= 1-5 if one to five items answered
= -2 if inappropriate (CU001RE = 0 or CU025RE = 2)
= -5 partial interview

2003-2005 Graduate Spouse Respondent Telephone Interview

Alcohol Symptoms: not available

Eighty percent of the 2003-5 graduate spouse sample was selected to be asked a subset of drinking problems/alcohol symptoms questions that the WLS graduates were asked. If

Alcohol Symptoms

2003-2005 Graduate Spouse Respondent Telephone Interview

AU001RE = 0, the respondent was not in the sample; if AU001RE = 1, the respondent was in the sample.

Sampled respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor or mixed alcoholic drinks (AU025RE). However, no alcohol symptoms questions were asked for the 2003-5 graduate spouse respondents.

2005 Sibling Spouse Respondent Telephone Interview

Alcohol Symptoms: not available

Eighty percent of the 2005 sibling spouse sample was selected to be asked a subset of drinking problems/alcohol symptoms questions that the WLS graduates were asked. If BU001RE = 0, the respondent was not in the sample; if BU001RE = 1, the respondent was in the sample.

Sampled respondent was asked whether he/she has ever drunk alcoholic beverages such as beer, wine, liquor or mixed alcoholic drinks (BU025RE). However, no alcohol symptoms questions were asked for the 2005 sibling spouse respondents.

Source

Seltzer M. L. (1971). The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. *American Journal of Psychiatry*, 127(12), 1653-1658.

Selected Studies Using Alcohol Symptoms Scale

- Krahn, D., Freese, J., Hauser, R. M., Barry, K., & Goodman, B. (2003). Alcohol use and cognition at mid-life: The importance of adjusting for baseline cognitive ability and educational attainment. *Alcoholism: Clinical & Experimental Research*, 27(7), 1162-66.
- Seltzer, M. M., Greenberg, J. S., Floyd, F. J., Pettee, Y., & Hong, J. (2001). Life course impacts of parenting a child with a disability. *American Journal on Mental Retardation*, 106(3), 265-286.

Hostility

1992-1993 Graduate Respondent Mail Questionnaire

Hostility

MU026REC: continuous variable based on 3 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MU023RER (18u), MU024RER (18v), MU025RER (18w)

On how many days during the past week did you

MU023RER. “feel irritable, or likely to fight or argue?”

MU024RER. “feel like telling someone off?”

MU025RER. “feel angry or hostile for several hours at a time?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused.

Scaling: MU026REC was constructed by summing the valid values across the three items if at least two items received a valid response.

Reliability: $\alpha = .79$

MU027RE: number of hostility items answered

= 0 if no hostility items answered

= 1-3 if one to three items answered

1992-1993 Graduate Respondent Telephone Interview

Hostility: not available

2003-2005 Graduate Respondent Mail Questionnaire

Hostility

IU026REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IU023RER (q1fw_u), IU024RER (q1fw_v), IU025RER (q1fw_w)

On how many days during the past week did you

IU023RER. “feel irritable, or likely to fight or argue?”

IU024RER. “feel like telling someone off?”

IU025RER. “feel angry or hostile for several hours at a time?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused.

Scaling: IU026REC was constructed by summing the valid values across the three items if at least two items received a valid response. This variable is coded -2 if less than two items received a valid response.

Reliability: $\alpha = .81$

IU027RE: number of hostility items answered

= 0 if no hostility items answered

= 1-3 if one to three items answered

2003-2005 Graduate Respondent Telephone Interview

Hostility: not available

1993-1994 Sibling Respondent Mail Questionnaire

Hostility: not available

1993-1994 Sibling Respondent Telephone Interview

Hostility: not available

2004-2007 Sibling Respondent Mail Questionnaire

Hostility

DU026REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions DU023RER (q1fw_u), DU024RER (q1fw_v), DU025RER (q1fw_w)

On how many days during the past week did you

DU023RER. “feel irritable, or likely to fight or argue?”

DU024RER. “feel like telling someone off?”

DU025RER. “feel angry or hostile for several hours at a time?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused.

Scaling: DU026REC was constructed by summing the valid values across the three items if at least two items received a valid response. This variable is coded -2 if less than two items received a valid response.

Reliability: $\alpha = .80$

DU027RE: number of hostility items answered

= 0 if no hostility items answered

= 1-3 if one to three items answered

2004-2007 Sibling Respondent Telephone Interview

Hostility: not available

Source

Spielberger, C. (1988). State-Trait Anger Expression Inventory. Professional manual. Psychological Assessment Resources, Odessa, FL.

Selected Studies Using Hostility Scale

MacLean, A., & Hauser R. M. (2004). Socioeconomic status and depression among adult siblings. Center for Demography and Ecology (CDE) Working Paper 2000-04. University of Wisconsin-Madison.

Marks, N. F. (1996). Flying solo at midlife: Gender, marital status, and psychological well-being. *Journal of Marriage and the Family*, 58, 917-32.

Seltzer, M. M., Greenberg, J. S., Floyd, F. J., Pettee, Y., & Hong, J. (2001). Life course impacts of parenting a child with a disability. *American Journal on Mental Retardation*, 106(3), 256-286.

Anxiety

1992-1993 Graduate Respondent Mail Questionnaire

Anxiety Symptoms: not available

1992-1993 Graduate Respondent Telephone Interview

Anxiety Symptoms: not available

2003-2005 Graduate Respondent Mail Questionnaire

Anxiety Symptoms: not available

2003-2005 Graduate Respondent Telephone Interview

Anxiety Symptoms: not available

1993-1994 Sibling Respondent Mail Questionnaire

Anxiety Symptoms and Beliefs

NU023REC: continuous variable based on 8 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NU025RER (40u), NU026RER (40v), NU027RER (40w), NU028RER (40x), NU029RER (40y), NU030RER (40z), NU031RER (40aa), NU032RER (40bb)

Anxiety

1993-1994 Sibling Respondent Mail Questionnaire

How many days during the past week did you

NU025RER. “feel you might collapse?”

NU026RER. “have difficulty swallowing?”

NU027RER. “feel you might die?”

NU028RER. “think you might be going crazy?”

NU029RER. “fear embarrassing yourself?”

NU030RER. “feel as though your surroundings were unreal?”

NU031RER. “feel that other people thought you were a fool?”

NU032RER. “have hot/cold flashes?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused (includes all 23 original sample members who are also siblings)

Scaling: NU023REC was constructed by summing the valid values across the eight items if at least four items received a valid response. The variable is coded -3 if there are fewer than four valid responses.

Reliability: $\alpha = .79$

NU024RE: number of anxiety symptoms and beliefs items answered

= 0 if no anxiety symptoms and beliefs items answered

= 1-3 if one to three items answered

= 4-8 if four to eight items answered

= -3 if not ascertained (includes all 23 original sample members who are also siblings)

1993-1994 Sibling Respondent Telephone Interview

Anxiety Symptoms: not available

2004-2007 Sibling Respondent Mail Questionnaire

Anxiety Symptoms: not available

Anxiety
Source and Selected Studies

2004-2007 Sibling Respondent Telephone Interview

Anxiety Symptoms: not available

Source

TK

Selected Studies Using Anxiety Symptoms and Beliefs Scale

TK

Spielberger Anxiety & Anger Indices

1992-1993 Graduate Respondent Mail Questionnaire

Spielberger Anxiety & Anger Indices: not available

1992-1993 Graduate Respondent Telephone Interview

Spielberger Anxiety & Anger Indices: not available

2003-2005 Graduate Respondent Mail Questionnaire

Spielberger Anxiety & Anger Indices ($\alpha = .90$)

Subscales (n=2)

1. Spielberger Anxiety Index

IUA33REC: continuous variable based on 10 items

Items: 2003-2005 Respondent Mail Questionnaire, Questions IU035RER (q2fw_a), IU037RER (q2fw_c), IU039RER (q2fw_e), IU041RER (q2fw_g), IU043RER (q2fw_i), IU045RER (q2fw_k), IU047RER (q2fw_m)

On how many days during the past week did you

IU035RER. “feel calm?”

IU037RER. “feel tense?”

IU039RER. “feel at ease?”

IU041RER. “worry over possible misfortune?”

IU043RER. “feel nervous?”

IU045RER. “feel jittery?”

IU047RER. “feel relaxed?”

Spielberger Anxiety & Anger Indices
2003-2005 Graduate Respondent Mail Questionnaire

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 refused

Scaling: IUA33REC was constructed by summing the valid values across the seven items if at least five items received a valid response. The variable was coded as -2 if fewer than five items received a valid response. IU035RER, IU039RER, and IU047RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .86$

IUB033RE: number of Spielberger anxiety index items answered
= 0 if no Spielberger anxiety index items answered
= 1-7 if one to seven items answered

2. Spielberger Anger Index

IUA34REC: continuous variable based on 7 items

Items: 2003-2005 Respondent Mail Questionnaire, Questions IU036RER (q2fw_b), IU038RER (q2fw_d), IU040RER (q2fw_f), IU042RER (q2fw_h), IU044RER (q2fw_j), IU046RER (q2fw_l), IU048RER (q2fw_n)

On how many days during the past week did you

IU036RER. “feel furious?”

IU038RER. “feel like banging on the table?”

IU040RER. “feel angry?”

IU042RER. “feel like yelling at somebody?”

IU044RER. “feel like breaking things?”

IU046RER. “feel mad?”

IU048RER. “feel irritated?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 refused

Scaling: IUA34REC was constructed by summing the valid values across the seven items if at least five items received a valid response. The variable was coded -2 if fewer than five items received a valid response.

Reliability: $\alpha = .88$

Spielberger Anxiety & Anger Indices
2003-2005 Graduate Respondent Mail Questionnaire

IUB034RE: number of Spielberger anger index items answered
= 0 if no Spielberger anger index items answered
= 1-7 if one to seven items answered

2003-2005 Graduate Respondent Telephone Interview

Spielberger Anxiety & Anger Indices: not available

1993-1994 Sibling Respondent Mail Questionnaire

Spielberger Anxiety & Anger Indices ($\alpha=.92$)

Subscales (n=2)

1. Spielberger Anxiety Index

NUA33REC: continuous variable based on 10 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NU035RER (43a), NU037RER (43c), NU039RER (43e), NU041RER (43g), NU043RER (43i), NU045RER (43k), NU047RER (43m), NU049RER (43o), NU051RER (43q), NU053RER (43s)

On how many days during the past week did you

NU035RER. "feel calm?"

NU037RER. "feel tense?"

NU039RER. "feel at ease?"

NU041RER. "worry over possible misfortune?"

NU043RER. "feel nervous?"

NU045RER. "feel jittery?"

NU047RER. "feel relaxed?"

NU049RER. "feel worried?"

NU051RER. "feel steady?"

NU053RER. "feel frightened?"

Spielberger Anxiety & Anger Indices
1993-1994 Sibling Respondent Mail Questionnaire

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused (includes all 23 original sample members who are also siblings)

Scaling: NUA33REC was constructed by summing the valid values across the ten items if at least five items received a valid response. The variable is coded -3 if there are fewer than five valid responses within the scale. NU035RER, NU039RER, NU047RER and NU051RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .88$

Note: NU035RER is a constructed variable based on questions scn9 and 43a.

NUB33REC: number of Spielberger anxiety index items answered
= 0 if no Spielberger anxiety index items answered
= 1-4 if one to four items answered
= 4-10 if five to ten items answered
= -3 if not ascertained/refused (includes all 23 original sample members who are also siblings)

2. Spielberger Anger Index

NUA34REC: continuous variable based on 10 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NU036RER (43b), NU038RER (43d), NU040RER (43f), NU042RER (43h), NU044RER (43j), NU046RER (43l), NU048RER (43n), NU050RER (43p), NU052RER (43r), NU054RER (43t)

On how many days during the past week did you

NU036RER. "feel furious?"

NU038RER. "feel like banging on the table?"

NU040RER. "feel angry?"

NU042RER. "feel like yelling at somebody?"

NU044RER. "feel like breaking things?"

NU046RER. "feel mad?"

NU048RER. "feel irritated?"

NU050RER. "feel like hitting someone?"

NU052RER. "feel burned up?"

NU054RER. "feel like swearing?"

Spielberger Anxiety & Anger Indices
1993-1994 Sibling Respondent Mail Questionnaire

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 not ascertained/refused (includes all 23 original sample members who are also siblings)

Scaling: NUA34REC was constructed by summing the valid values across the ten items if at least five items received a valid response. The variable is coded -3 if there are fewer than five valid responses within the scale.

Reliability: $\alpha = .89$

NUB34REC: number of Spielberger anger index items answered
= 00 if no Spielberger anger index items answered
= 1-4 if one to four items answered
= 5-10 if five to ten items answered
= -3 if not ascertained/refused (includes all 23 original sample members who are also siblings)

1993-1994 Sibling Respondent Telephone Interview

Spielberger Anxiety & Anger Indices: not available

2004-2007 Sibling Respondent Mail Questionnaire

Spielberger Anxiety & Anger Indices ($\alpha=.92$)

Subscales (n=2)

1. Spielberger Anxiety Index

DUA33REC: continuous variable based on 10 items

Items: 2003-2005 Respondent Mail Questionnaire, Questions DU035RER (q2fw_a), DU037RER (q2fw_c), DU039RER (q2fw_e), DU041RER (q2fw_g), DU043RER (q2fw_i), DU045RER (q2fw_k), DU047RER (q2fw_m)

Spielberger Anxiety & Anger Indices
2004-2007 Sibling Respondent Mail Questionnaire

On how many days during the past week did you

- DU035RER. “feel calm?”
- DU037RER. “feel tense?”
- DU039RER. “feel at ease?”
- DU041RER. “worry over possible misfortune?”
- DU043RER. “feel nervous?”
- DU045RER. “feel jittery?”
- DU047RER. “feel relaxed?”

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 refused

Scaling: DUA33REC was constructed by summing the valid values across the seven items if at least five items received a valid response. The variable was coded as -2 if fewer than five items received a valid response. DU035RER, DU039RER, and DU047RER were reverse coded in the creation of this variable.

Reliability: $\alpha = .85$

DUB033RE: number of Spielberger anxiety index items answered
= 0 if no Spielberger anxiety index items answered
= 1-7 if one to seven items answered

2. Spielberger Anger Index

DUA34REC: continuous variable based on 7 items

Items: 2003-2005 Respondent Mail Questionnaire, Questions DU036RER (q2fw_b), DU038RER (q2fw_d), DU040RER (q2fw_f), DU042RER (q2fw_h), DU044RER (q2fw_j), DU046RER (q2fw_l), DU048RER (q2fw_n)

On how many days during the past week did you

- DU036RER. “feel furious?”
- DU038RER. “feel like banging on the table?”
- DU040RER. “feel angry?”
- DU042RER. “feel like yelling at somebody?”
- DU044RER. “feel like breaking things?”
- DU046RER. “feel mad?”
- DU048RER. “feel irritated?”

Spielberger Anxiety & Anger Indices
2004-2007 Sibling Respondent Mail Questionnaire

Coding: 0 zero days; 1 one day; 2 two days; 3 three days; 4 four days; 5 five days; 6 six days; 7 seven days; -3 refused

Scaling: DUA34REC was constructed by summing the valid values across the seven items if at least five items received a valid response. The variable was coded -2 if fewer than five items received a valid response.

Reliability: $\alpha = .89$

DUB034RE: number of Spielberger anger index items answered
= 0 if no Spielberger anger index items answered
= 1-7 if one to seven items answered

2004-2007 Sibling Respondent Telephone Interview

Spielberger Anxiety & Anger Indices: not available

Source

Anxiety Index

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *STAI: Manual for the State Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Anger Index

Spielberger, C. D. (1980). *Preliminary manual for the State-Trait Anger Scale (STAS)*. Tampa, FL: University of South Florida Human Resources Institute.

Selected Studies Using Spielberger Anxiety and Anger Indices

TK

Family Work Spillover

1992-1993 Graduate Respondent Mail Questionnaire

Family Work Spillover ($\alpha = .73$)

Subscales ($n = 3$)

1. Family Stress Spills Over To Work

MY001REC: continuous variable based on 4 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MY003RER (22a), MY004RER (22c), MY005RER (22d), MY006RER (22e)

MY003RER. "Family matters reduce the time I can devote to my job."

MY004RER. "Family worries or problems distract me from my work."

MY005RER. "Family activities stop me from getting the amount of sleep I need to do my job well."

MY006RER. "Family obligations reduce the time I need to relax or be by myself."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate; -3 not ascertained/refused.

Scaling: MY001REC was constructed by summing the valid values across the four items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Note: MY003RER is a constructed variable based on questions scn4, 21 and 22a.

Reliability: $\alpha = .73$

MY001REI: an imputed version of MY001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

MY002RE: number of family stress spillover items answered
= 0 if no family stress spillover items answered
= 1-4 if one to four items answered

2. Work Stress Spills Over Into Family Life

MY007REC: continuous variable based on 4 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MY009RER (22g), MY010RER (22h), MY011RER (22k), MY012RER (22i)

MY009RER. "My job reduces the amount of time I can spend with the family."

MY010RER. "Problems at work make me irritable at home."

MY011RER. "My job takes so much energy I don't feel up to doing things that need attention at home."

MY012RER. "My job involves a lot of travel away from home."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate; -3 not ascertained/refused.

Scaling: MY007REC was constructed by summing the valid values across the four items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .56$

MY007REI: an imputed version of MY007REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

MY008RE: number of work stress spillover items answered
= 0 if no work stress spillover items answered
= 1-4 if one to four items answered

3. Family Enhancement Spills Over Into Work Life

MY013REC: continuous variable based on 3 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MY015RER (22b), MY016RER (22f), MY017RER (22j)

MY015RER. "I can do good work on the job because I am so happy at home."

MY016RER. "Family responsibilities make me work harder on the job."

Family Work Spillover
1992-1993 Graduate Respondent Mail Questionnaire

MY017RER. "I can devote a lot of time to my job because of the support I get on the home front."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate; -3 not ascertained/refused.

Scaling: MY013REC was constructed by summing the valid values across the three items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .42$

MY013REI: an imputed version of MY013REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

MY014RE: number of family enhancing work items answered
= 0 if no family enhancing work items answered
= 1-3 if one to three items answered

1992-1993 Graduate Respondent Telephone Interview

Family Work Spillover: not available

2003-2005 Graduate Respondent Mail Questionnaire

Family Work Spillover ($\alpha = .55$)

Subscales ($n = 3$)

1. Family Stress Spills Over To Work

IY001REC: continuous variable based on 2 items

Family Work Spillover
2003-2005 Graduate Respondent Mail Questionnaire

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IY004RER (q5wf_d), IY005RER (q5wf_j)

IY004RER. "Family worries or problems distract me from my work."

IY005RER. "Family activities stop me from getting the amount of sleep I need to do my job well."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 Inappropriate; -3 not ascertained/refused.

Scaling: IY001REC was constructed by summing the valid values across the two items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .53$

IY002RE: Number of family stress spillover items answered.

=0 if no family stress spillover items answered

=1-2 if one to two items answered

2. Work Stress Spills Over Into Family Life

IY007REC: continuous variable based on 2 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IY009RER (q5wf_b), IY011RER (q5wf_g)

IY009RER. "My job reduces the amount of time I can spend with the family."

IY011RER. "My job takes so much energy I don't feel up to doing things that need attention at home."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate; -3 not ascertained/refused.

Scaling: IY007REC was constructed by summing the valid values across the two items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .44$

IY008RE: Number of work stress spillover items answered.

=0 if no work stress spillover items answered

=1-2 if one to two items answered

3. Family Enhancement Spills Over Into Work Life

IY013REC: continuous variable based on 3 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IY015RER (q5wf_a), IY016RER (q5wf_e), IY017RER (q5wf_f)

IY015RER. "I can do good work on the job because I am so happy at home."

IY016RER. "Family responsibilities make me work harder on the job."

IY017RER. "I can devote a lot of time to my job because of the support I get on the home front."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate; -3 not ascertained/refused.

Scaling: IY013REC was constructed by summing the valid values across the two items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .51$

IY008RE: Number of family enhancement spillover items answered.

=0 if no work stress spillover items answered

=1-2 if one to two items answered

2003-2005 Graduate Respondent Telephone Interview

Family Work Spillover: not available

1993-1994 Sibling Respondent Mail Questionnaire

Family Work Spillover ($\alpha = .74$)

Subscales (n = 3)

1. Family Stress Spills Over Into Work

NY001REC: continuous variable based on 4 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NY003RER (45a), NY004RER (45c), NY005RER (45d), NY006RER (45e)

NY003RER. "Family matters reduce the time I can devote to my job."

NY004RER. "Family worries or problems distract me from my work."

NY005RER. "Family activities stop me from getting the amount of sleep I need to do my job well."

NY006RER. "Family obligations reduce the time I need to relax or be by myself."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/ refused

Scaling: NY001REC was constructed by summing the valid values across the four items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .75$

NY001REI: an imputed version of NY001REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

NY002RE: number of family stress spillover items answered
= 0 if no family stress spillover items answered
= 1-4 if one to four items answered

2. Work Stress Spills Over Into Family Life

NY007REC: continuous variable based on 4 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NY009RER (45g), NY010RER (45h), NY011RER (45k), NY012RER (45i)

NY009RER. "My job reduces the amount of time I can spend with the family."

NY010RER. "Problems at work make me irritable at home."

NY011RER. "My job takes so much energy I don't feel like doing things that need attention at home."

NY012RER. "My job involves a lot of travel away from home."

Family Work Spillover
1993-1994 Sibling Respondent Mail Questionnaire

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/refused

Scaling: NY007REC was constructed was constructed by summing the valid values across the four items if at least one item received a valid response. All items were reverse coded in the creation of this variable

Reliability: $\alpha = .56$

NY007REI: an imputed version of NY007REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

NY008RE: number of work spillover items answered
= 0 if no work spillover items answered
= 1-4 if one to four items answered

3. Family Enhancement Spills Over Into Work Life

NY013REC: continuous variable based on 3 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NY015RER (45b), NY016RER (45f), NY017RER (45j)

NY015RER. "I can do good work on the job because I am so happy at home."

NY016RER. "Family responsibilities make me work harder on the job."

NY017RER. "I can devote a lot of time to my job because of the support I get on the home front."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/refused

Scaling: NY013REC was constructed by summing the valid values across the four items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .38$

NY013REI: an imputed version of NY013REC, with missing responses imputed to the mean of remaining valid responses prior to summing if at least two items received a valid response. The variable is coded -3 if there are fewer than two valid responses.

NY014RE: number of family enhancement items answered
= 0 if no family enhancement items answered
= 1-3 if one to three items answered

1993-1994 Sibling Respondent Telephone Interview

Family Work Spillover: not available

2004-2007 Sibling Respondent Mail Questionnaire

Family Work Spillover ($\alpha = .53$)

Subscales ($n = 3$)

1. Family Stress Spills Over Into Work

DY001REC: continuous variable based on 2 items

Items: 2004-2007 Sibling Mail Questionnaire, Questions DY004RER (q5wf_d),
DY005RER (q5wf_j)

DY004RER. "Family worries or problems distract me from my work."

DY005RER. "Family activities stop me from getting the amount of sleep I need to do my job well."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/ refused

Scaling: DY001REC was constructed by summing the valid values across the two items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .49$

DY002RE: number of family stress spillover items answered
= 0 if no family stress spillover items answered
= 1-2 if one to two items answered

2. Work Stress Spills Over Into Family Life

DY007REC: continuous variable based on 2 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions DY009RER (q5wf_b), DY011RER (q5wf_g)

DY009RER. "My job reduces the amount of time I can spend with the family."

DY011RER. "My job takes so much energy I don't feel like doing things that need attention at home."

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/refused

Scaling: DY007REC was constructed was constructed by summing the valid values across the two items if at least one item received a valid response. All items were reverse coded in the creation of this variable

Reliability: $\alpha = .41$

DY008RE: number of work spillover items answered
= 0 if no work spillover items answered
= 1-2 if one to two items answered

3. Family Enhancement Spills Over Into Work Life

DY013REC: continuous variable based on 3 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions DY015RER (q5wf_a), DY016RER (q5wf_e), IY017RER (q5wf_f)

DY015RER. "I can do good work on the job because I am so happy at home."

DY016RER. "Family responsibilities make me work harder on the job."

DY017RER. "I can devote a lot of time to my job because of the support I get on the home front."

Family Work Spillover
2004-2007 Sibling Respondent Mail Questionnaire

Coding: 1 strongly agree; 2 agree; 3 neither agree nor disagree; 4 disagree; 5 strongly disagree; -2 inappropriate (not currently employed); -3 not ascertained/refused

Scaling: DY013REC was constructed by summing the valid values across the three items if at least one item received a valid response. All items were reverse coded in the creation of this variable.

Reliability: $\alpha = .53$

DY014RE: number of family enhancement items answered
= 0 if no family enhancement items answered
= 1-3 if one to three items answered

2004-2007 Sibling Respondent Telephone Interview

Family Work Spillover: not available

Source

These measures were developed by Alice Rossi on behalf of the John D. and Catherine T. MacArthur Network on Successful Midlife Development (MIDMAC) group, active from 1991 to 1994. A slightly adapted version of these items, plus others, are also included in MIDUS 1995 and MIDUS 2004.

For more information see:

Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5* (1), 111-126.

Selected Studies Using Family-Work Spillover Scales

Marks, N. F. (1998). Does it hurt to care? Caregiving, work-family conflict, and midlife well-being. *Journal of Marriage & the Family, 60*, 951-966.

Family Work Spillover
2004-2007 Sibling Respondent Mail Questionnaire

Raymo, James M., Sweeney, Megan M.. 2006. "Work-Family Conflict and Retirement Preferences." *Journal of Gerontology: Social Sciences* 61B:S161-S169.

Cognition Similarities

1992-1993 Graduate Respondent Mail Questionnaire

Cognition Similarities: not available

1992-1993 Graduate Respondent Telephone Interview

Eight-Item Score for Cognition Similarities

RI001RE: continuous variable based on 8 items

Items: 1992-3 Graduate Respondent Telephone Interview, Questions RI002RE (314t), RI003RE (316), RI004RE (316f), RI005RE (316m), RI006RE (316s), RI007RE (318), RI008RE (318f), RI009RE (318m)

In what way are

RI002RE. “an orange and a banana alike?”

RI003RE. “a table and a chair alike?”

RI004RE. “an eye and an ear alike?”

RI005RE. “an egg and a seed alike?”

RI006RE. “air and water alike?”

RI007RE. “work and play alike?”

RI008RE. “a fly and a tree alike?”

RI009RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. See COR458 and COR572 for detailed information about the scoring of cognition items. If a question was not answered, the code is -3. If at least one individual score is -3, then RI001RE is -3.

Scaling: RI001RE was constructed by summing the valid values across the eight items. RI001RE is coded -3 if at least one of the eight items is coded -3.

Reliability: $\alpha = .51$

Note: Items RI002RE-RI009RE are 8 of the 14 items from the Wechsler Adult Intelligence Scale (WAIS).

2003-2005 Graduate Respondent Mail Questionnaire

Cognition Similarities: not available

2003-2005 Graduate Respondent Telephone Interview

Items that make up the cognition similarities scale are based on the fourteen items from the Wechsler Adult Intelligence Scale (WAIS). The five simplest items from the WAIS were eliminated due to the fact that the general ability of the sample is high enough to cause little variation in response to simple items. 79% of the sample, who were also selected to answer the alcohol section (GU001RE = 1), were asked nine WAIS items. All the other respondents were asked six of the nine questions.

Six-Item Score for Cognition Similarities

GI101RE: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GI111RE (i13p1), GI113RE (i13p4), GI115RE (i13p6), GI116RE (i13p7), GI118RE (i13p9), GI119RE (i13p10).

In what way are

GI111RE. “an orange and a banana alike?”

GI113RE. “an eye and an ear alike?”

GI115RE. “an egg and a seed alike?”

GI116RE. “a table and a chair alike?”

GI118RE. “a fly and a tree alike?”

GI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don't know)

Cognition Similarities 2003-2005 Graduate Respondent Telephone Interview

was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Scaling: GI101RE was constructed by summing the valid values across the six items if at least one item has a valid value (-1, 0, 1 or 2, with -1 counting as 0). GI101RE is coded -4 (not ascertained) if none of the six items has a valid response.

Reliability: $\alpha = .50$

Note: GI111RE, GI113RE, GI115RE, GI116RE, GI118RE and GI119RE replicate the 1993 items, RI002RE, RI004RE, RI005RE, RI003RE, RI008RE and RI009RE, respectively. This 6-item score replicates RI001RE from the 1993 wave but differs in number of items summarized (6 instead of 8 in 1993).

Nine-Item Score for Cognition Similarities

GI106RE: continuous variable based on 9 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions GI111RE (i13p1), GI112RE (i13p3), GI113RE (i13p4), GI114RE (i13p5), GI115RE (i13p6), GI116RE (i13p7), GI117RE (i13p8), GI118RE (i13p9), GI119RE (i13p10).

In what way are

- GI111RE. “an orange and a banana alike?”
- GI112RE. “a boat and an automobile alike?”
- GI113RE. “an eye and an ear alike?”
- GI114RE. “north and west alike?”
- GI115RE. “an egg and a seed alike?”
- GI116RE. “a table and a chair alike?”
- GI117RE. “a poem and a statue alike?”
- GI118RE. “a fly and a tree alike?”
- GI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don't know) was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -2 (inappropriate) was given if the respondent was not in the subsample for the additional three items ($GU001RE \neq 1$); -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Cognition Similarities
2003-2005 Graduate Respondent Telephone Interview

Scaling: GI106RE was constructed by summing the valid values across the nine items if at least one item has a valid value (-1, 0, 1 or 2) with -1 counting as 0. GI101RE is coded -4 (not ascertained) if none of the nine items has a valid response. Respondents not in the subsample (GU001RE \neq 1) were coded -2 (inappropriate).

Reliability: $\alpha = .64$

Note: GI111RE, GI113RE, GI115RE, GI116RE, GI118RE and GI119RE replicate the 1993 items, RI002RE, RI004RE, RI005RE, RI003RE, RI008RE and RI009RE, respectively. GI112RE, GI114RE, and GI117RE are new in the 2004 wave.

1993-1994 Sibling Respondent Mail Questionnaire

Cognition Similarities: not available

1993-1994 Sibling Respondent Telephone Interview

Ten-Item Score for Cognition Similarities

SI001RE: continuous variable based on 10 items

Items: 1993-4 Sibling Respondent Telephone Interview, Questions SI002RE (314t, RI002RE), SI003RE (315), SI004RE (316f, RI004RE), SI005RE (315e), SI006RE (316m, RI005RE), SI007RE (316, RI003RE), SI008RE (315g), SI009RE (318, RI007RE), SI010RE (318f, RI008RE), SI011RE (318m, RI009RE)

In what way are

SI002RE. “an orange a banana alike?”

SI003RE. “a dog and a lion alike?”

SI004RE. “an eye and an ear alike?”

SI005RE. “north and west alike?”

SI006RE. “an egg and a seed alike?”

SI007RE. “a table and a chair alike?”

SI008RE. “a poem and a statue alike?”

SI009RE. “work and play alike?”

SI010RE. “a fly and a tree alike?”

Cognition Similarities
1993-1994 Sibling Respondent Telephone Interview

SI011RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. See COR572 for detailed information about the scoring of cognition items. The code is -3 if a response was not ascertained or if the questions were not asked (some interviews were partial).

Scaling: SI001RE was constructed by summing the values across the ten items if all ten items receive a valid response. If at least one individual score is -3, SI001RE is -3. The 26 original WLS graduate sample members who are also siblings (SA005RE=4) were only asked 7 of the 10 cognition items. The other three items (SI003RE, SI005RE and SI008RE) are coded -3 for these respondents, and as a result SI001RE is coded -3 for these respondents as well.

Reliability: $\alpha = .70$

Notes: Items SI002RE-SI011RE are ten of the fourteen items from the Wechsler Adult Intelligence Scale (WAIS). SI009RE is a constructed variable based on questions 314t and RI002RE. SI004RE is a constructed variable based on questions 316f and RI004RE. SI006RE is a constructed variable based on questions 316m and RI005RE. SI007RE is a constructed variable based on questions 316 and RI003RE. SI009RE is a constructed variable based on questions 318 and RI007RE. SI010RE is a constructed variable based on questions 318f and RI008RE. SI011RE is a constructed variable based on questions 318m and RI009RE.

2004-2007 Sibling Respondent Mail Questionnaire

Cognition Similarities: not available

2004-2007 Sibling Respondent Telephone Interview

Items that make up the cognition similarities scale are based on the fourteen items from the Wechsler Adult Intelligence Scale (WAIS). The five simplest items from the WAIS were eliminated due to the fact that the general ability of the sample is high enough to cause little variation in response to simple items. 79% of the sample, who were also selected to answer the alcohol section (CU001RE = 1), were asked nine WAIS items. All the other respondents were asked six of the nine questions.

Six-Item Score for Cognition Similarities

CI101RE: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions CI111RE (i13p1), CI113RE (i13p4), CI115RE (i13p6), CI116RE (i13p7), CI118RE (i13p9), CI119RE (i13p10).

In what way are

CI111RE. “an orange and a banana alike?”

CI113RE. “an eye and an ear alike?”

CI115RE. “an egg and a seed alike?”

CI116RE. “a table and a chair alike?”

CI118RE. “a fly and a tree alike?”

CI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in Appendix G, COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don't know) was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Scaling: CI101RE was constructed by summing the valid values across the six items if at least one item has a valid value (-1, 0, 1 or 2, with -1 counting as 0). CI101RE is coded -4 (not ascertained) if none of the six items has a valid response.

Reliability: $\alpha = .50$

Note: CI111RE, CI113RE, CI115RE, CI116RE, CI118RE and CI119RE replicate the 1994 items, SI002RE, SI004RE, SI005RE, SI003RE, SI008RE and SI009RE, respectively. This 6-item score replicates SI001RE from the 1994 wave but differs in number of items summarized (6 instead of 8 in 1994).

Nine-Item Score for Cognition Similarities

CI106RE: continuous variable based on 9 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions CI111RE (i13p1), CI112RE (i13p3), CI113RE (i13p4), CI114RE (i13p5), CI115RE (i13p6), CI116RE (i13p7), CI117RE (i13p8), CI118RE (i13p9), CI119RE (i13p10).

Cognition Similarities
2004-2007 Sibling Respondent Telephone Interview

In what way are

- CI111RE. “an orange and a banana alike?”
- CI112RE. “a boat and an automobile alike?”
- CI113RE. “an eye and an ear alike?”
- CI114RE. “north and west alike?”
- CI115RE. “an egg and a seed alike?”
- CI116RE. “a table and a chair alike?”
- CI117RE. “a poem and a statue alike?”
- CI118RE. “a fly and a tree alike?”
- CI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don’t know) was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -2 (inappropriate) was given if the respondent was not in the subsample for the additional three items (CU001RE \neq 1); -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Scaling: CI106RE was constructed by summing the valid values across the nine items if at least one item has a valid value (-1, 0, 1 or 2) with -1 counting as 0. CI101RE is coded -4 (not ascertained) if none of the nine items has a valid response. Respondents not in the subsample (CU001RE \neq 1) were coded -2 (inappropriate).

Reliability: $\alpha = .64$

Note: CI111RE, CI113RE, CI115RE, CI116RE, CI118RE and CI119RE replicate the 1994 items, SI002RE, SI004RE, SI005RE, SI003RE, SI008RE and SI009RE, respectively. SI112RE, SI114RE, and SI117RE are new in the 2004 wave.

2003-2005 Graduate Spouse Respondent Telephone Interview

Items that make up the cognition similarities scale are based on the fourteen items from the Wechsler Adult Intelligence Scale (WAIS). The five simplest items from the WAIS were eliminated due to the fact that the general ability of the sample is high enough to cause little variation in response to simple items. All graduate spouse respondents were asked six of the nine questions.

Six-Item Score for Cognition Similarities

AI101RE: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions AI111RE (i13p1), AI113RE (i13p4), AI115RE (i13p6), AI116RE (i13p7), AI118RE (i13p9), AI119RE (i13p10).

In what way are

AI111RE. “an orange and a banana alike?”

AI113RE. “an eye and an ear alike?”

AI115RE. “an egg and a seed alike?”

AI116RE. “a table and a chair alike?”

AI118RE. “a fly and a tree alike?”

AI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don’t know) was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Scaling: AI101RE was constructed by summing the valid values across the six items if at least one item has a valid value (-1, 0, 1 or 2, with -1 counting as 0). AI101RE is coded -4 (not ascertained) if none of the six items has a valid response.

Reliability: $\alpha = .46$

Note: The summary score AI101RE replicates GI101RE from the 2003-5 graduate wave and the CI101RE from the 2004-7 sibling wave.

Nine-Item Score for Cognition Similarities: not available

2005 Sibling Spouse Respondent Telephone Interview

Cognition Similarities 2005 Sibling Spouse Respondent Telephone Interview

Items that make up the cognition similarities scale are based on the fourteen items from the Wechsler Adult Intelligence Scale (WAIS). The five simplest items from the WAIS were eliminated due to the fact that the general ability of the sample is high enough to cause little variation in response to simple items. All sibling spouse respondents were asked six of the nine questions.

Six-Item Score for Cognition Similarities

BI101RE: continuous variable based on 6 items

Items: 2003-5 Graduate Respondent Telephone Interview, Questions BI111RE (h_i520), BI113RE (h_i540), BI115RE (h_i550), BI116RE (h_i560), BI118RE (h_i570), BI119RE (h_i580).

In what way are

BI111RE. “an orange and a banana alike?”

BI113RE. “an eye and an ear alike?”

BI115RE. “an egg and a seed alike?”

BI116RE. “a table and a chair alike?”

BI118RE. “a fly and a tree alike?”

BI119RE. “praise and punishment alike?”

Coding: A score of 0 (low), 1 or 2 (high) was assigned to each response by a computer program. Scoring example and additional information about scoring and open-ending coding can be found in COR970, COR871 and COR859. Detailed information about the scoring of cognition items in previous waves can be found in Appendix G, COR458 (1992/3 graduate interview) and COR572 (1993/4 sibling interview). -1 (don't know) was given to respondents who did not provide any specific guess and counts as 0 toward summary scores; -3 (refused) and -4 (not ascertained) do not count toward summary scores.

Scaling: BI101RE was constructed by summing the valid values across the six items if at least one item has a valid value (-1, 0, 1 or 2, with -1 counting as 0). BI101RE is coded -4 (not ascertained) if none of the six items has a valid response.

Reliability: $\alpha = .51$

Note: The summary score BI101RE replicates GI101RE from the 2003-5 graduate wave and the CI101RE from the 2004-7 sibling wave.

Nine-Item Score for Cognition Similarities: not available

Source

Wechsler, D. (1981). *Wechsler Adult Intelligence Scale – Revised manual*. San Antonio, TX: The Psychological Corporation.

Selected Studies Using Cognition Similarities

Hauser, R. M., Sheridan, J. T., & Warren, J. R. (1999). Socioeconomic achievements of siblings in the life course: New findings from the WLS. *Research on Aging, 21*(2), 338-378.

Krahn, D., Freese, J., Hauser, R. M., Barry, K., & Goodman, B. (2003). Alcohol use and cognition at mid-life: The importance of adjusting for baseline cognitive ability and educational attainment. *Alcoholism: Clinical & Experimental Research, 27*(7), 1162-1166.

Illness

1992-1993 Graduate Respondent Mail Questionnaire

Total Number of Illnesses

MX117REC: continuous variable based on 17 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MX083RER (10Aa), MX085RER (10Ab), MX087RER (10Ac), MX089RER (10Ad), MX091RER (10Ae), MX093RER (10Af), MX095RER (10Ag), MX097RER (10Ah), MX099RER (10Ai), MX101RER (10Aj), MX103RER (10Ak), MX105RER (10Al), MX107RER (10Am), MX109RER (10An), MX111RER (10Ao), MX113RER (10Ap), MX115RER (10Aq)

Has a medical professional says you have

- MX083RER. "anemia."
- MX085RER. "asthma."
- MX087RER. "arthritis or rheumatism."
- MX089RER. "bronchitis or emphysema."
- MX091RER. "cancer."
- MX093RER. "chronic liver trouble."
- MX095RER. "diabetes."
- MX097RER. "serious back trouble."
- MX099RER. "heart trouble."
- MX101RER. "high blood pressure."
- MX103RER. "circulation problems."
- MX105RER. "kidney or bladder problems."
- MX107RER. "ulcer."
- MX109RER. "allergies."
- MX111RER. "multiple sclerosis."
- MX113RER. "colitis."
- MX115RER. "some other illness or condition."

Coding: 1 has symptom; 2 does not have symptom.

Scaling: MX117RE was constructed by counting the number of the illness checked across the 17 items.

Reliability: Kuder Richardson Coef. (KR-20) = .48

Illness

1992-1993 Graduate Respondent Mail Questionnaire

Note: MX115RER is a constructed variable based on questions 10Aq and IN75 and only available among respondents who were interviewed in 1975.

1992-1993 Graduate Respondent Telephone Interview

Total Number of Illnesses: not available

2003-2005 Graduate Respondent Mail Questionnaire

Total Number of Illnesses

IX117REC: continuous variable based on 14 items (for males) or 13 items (for females).

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions IX109RER (q16h_a), IX085RER (q16h_b), IX089RER (q16h_c), IX142RER (q16h_d), IX103RER (q16h_e), IX144RER (q16h_f), IX146RER (q16h_g), IX148RER (q16h_h), IX105RER (q16h_i), IX111RER (q16h_j), IX150RER (q16h_k), IX097RER (q16h_i), IX107RER (q16h_m), IX152RER (q16h_n).

MX083RER (10Aa), MX085RER (10Ab), MX087RER (10Ac), MX089RER (10Ad), MX091RER (10Ae), MX093RER (10Af), MX095RER (10Ag), MX097RER (10Ah), MX099RER (10Ai), MX101RER (10Aj), MX103RER (10Ak), MX105RER (10Al), MX107RER (10Am), MX109RER (10An), MX111RER (10Ao), MX113RER (10Ap), MX115RER (10Aq)

Has a medical professional ever says you have any of the illnesses or conditions listed below?

IX109RER. "Allergies "

IX085RER. "Asthma"

IX089RER. "Chronic bronchitis/Emphysema"

IX142RER. "Chronic Sinus problems"

IX103RER. "Circulation problems"

IX144RER. "Fibromyalgia"

IX146RER. "High cholesterol"

IX148RER. "Irritable bowel syndrome"

IX105RER. "Kidney/bladder problems"

Illness

2003-2005 Graduate Respondent Mail Questionnaire

IX111RER. "Multiple sclerosis"
IX150RER. "Osteoporosis"
IX097RER. "Serious back trouble"
IX107RER. "Ulcer"
IX152RER. "Prostate problems" (male only)

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate

Scaling: IX117RE was constructed by counting the number of the illness checked across the 14 items.

Reliability: Kuder Richardson Coef. (KR-20) for male = .69
Kuder Richardson Coef. (KR-20) for female = .62

Note: IX152RER is only available for male respondents.

IX117RED: number of illness items answered.
= 0 if no illness item answered
= 1-14 if one to fourteen items answered

2003-2005 Graduate Respondent Telephone Interview

Total Number of Illnesses: not available

1993-1994 Sibling Respondent Mail Questionnaire

Total Number of Illnesses

NX139RER: continuous variable based on 18 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NX103RER (11Aa, scn3), NX105RER (11Ab), NX107RER (11Ac), NX109RER (11Ad), NX111RER (11Ae), NX113RER (11Af), NX115RER (11Ag), NX117RER (11Ah), NX119RER (11Ai), NX121RER (11Aj), NX123RER (11Ak), NX125RER (11Al), NX127RER (11Am), NX129RER (11An), NX131RER (11Ao), NX133RER (11Ap), NX135RER (11Ap), NX137RER (11Ar,allAr)

Has a medical professional ever said you have

Illness
1993-1994 Sibling Respondent Mail Questionnaire

NX103RER. “anemia?”
NX105RER. “asthma?”
NX107RER. “arthritis/rheumatism?”
NX109RER. “emphysema?”
NX111RER. “cancer?”
NX113RER. “chronic liver trouble?”
NX115RER. “diabetes?”
NX117RER. “serious back trouble?”
NX119RER. “heart trouble?”
NX121RER. “high blood pressure?”
NX123RER. “circulation problems?”
NX125RER. “kidney/bladder problems?”
NX127RER. “an ulcer?”
NX129RER. “allergies?”
NX131RER. “multiple sclerosis?”
NX133RER. “colitis?”
NX135RER. “high cholesterol?”
NX137RER. “other illnesses or conditions.” [Listed; see Notes below.]

Coding: The variables that comprise this scale are coded: 1 yes; 2 no; -3 not ascertained/refused.

Scaling: NX139RER was constructed by counting the number of “yes” responses for the eighteen items.

Reliability: Kuder Richardson Coef. (KR-20) = .65

Notes: NX103RER is a constructed variable based on questions 11Aa scn3.
NX137RER is a constructed variable based on questions 11Ar and a11Ar. A complete list of the other illnesses or conditions that make up NX137RER is available in the 1993-4 Sibling Respondent Mail Questionnaire codebook.

1993-1994 Sibling Respondent Telephone Interview

Total Number of Illnesses: not available

2004-2007 Sibling Respondent Mail Questionnaire

Total Number of Illnesses

DX117REC: continuous variable based on 14 items (for males) or 13 items (for females).

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions DX109RER (q16h_a), DX085RER (q16h_b), DX089RER (q16h_c), DX142RER (q16h_d), DX103RER (q16h_e), DX144RER (q16h_f), DX146RER (q16h_g), DX148RER (q16h_h), DX105RER (q16h_i), DX111RER (q16h_j), DX150RER (q16h_k), DX097RER (q16h_l), DX107RER (q16h_m), DX152RER (q16h_n).

Has a medical professional ever says you have any of the illnesses or conditions listed below?

DX109RER. "Allergies "
DX085RER. "Asthma"
DX089RER. "Chronic bronchitis/Emphysema"
DX142RER. "Chronic Sinus problems"
DX103RER. "Circulation problems"
DX144RER. "Fibromyalgia"
DX146RER. "High cholesterol"
DX148RER. "Irritable bowel syndrome"
DX105RER. "Kidney/bladder problems"
DX111RER. "Multiple sclerosis"
DX150RER. "Osteoporosis"
DX097RER. "Serious back trouble"
DX107RER. "Ulcer"
DX152RER. "Prostate problems" (male only)

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate

Scaling: DX117RE was constructed by counting the number of the illness checked across the 14 items.

Reliability: Kuder Richardson Coef. (KR-20) for male = .70
Kuder Richardson Coef. (KR-20) for female = .62

Note: DX152RER is only available for male respondents.

DX117RED: number of illness items answered.
= 0 if no illness item answered
= 1-14 if one to fourteen items answered

Illness
Source and Selected Studies

2004-2007 Sibling Respondent Telephone Interview

Total Number of Illnesses: not available

Source

Duke University Center for the Study of Aging and Human Development. (1978).
Multidimensional functional assessment: The OARS methodology. Durham, NC: Duke University.

Selected Studies Using Illness Symptoms Count

Miech, R. A., & Hauser, R. M. (2001). Socioeconomic status (SES) and health at midlife: A comparison of educational attainment with occupation-based indicators. *Annals of Epidemiology*, 11(2), 75-84.

Health Symptoms

1992-1993 Graduate Respondent Mail Questionnaire

Total Number of Physical Symptoms

MX082REC: continuous variable based on 22 items

Items: 1992-3 Graduate Respondent Mail Questionnaire, Questions MX016RER (9Aa), MX019RER (9Ab), MX022RER (9Ac), MX025RER (9Ad), MX028RER (9Ae), MX031RER (9Af), MX034RER (9Ag), MX037RER (9Ah), MX040RER (9Ai), MX043RER (9Aj), MX046RER (9Ak), MX049RER (9Al), MX052RER (9Am), MX055RER (9An), MX058RER (9Ao), MX061RER (9Ap), MX064RER (9Aq), MX067RER (9Ar), MX070RER (9As), MX073RER (9At), MX076RER (9Au), MX079RER (9Av)

In the past six months have you

- MX016RER. "felt a lack of energy."
- MX019RER. "had trouble sleeping."
- MX022RER. "had fatigue or exhaustion."
- MX025RER. "had headaches."
- MX028RER. "had visual problems."
- MX031RER. "felt dizziness or faintness."
- MX034RER. "felt numbness."
- MX037RER. "had ringing in the ears."
- MX040RER. "felt nausea."
- MX043RER. "vomited."
- MX046RER. "had upset stomach."
- MX049RER. "had constipation."
- MX052RER. "had diarrhea."
- MX055RER. "had urination problems."
- MX058RER. "had aching muscles."
- MX061RER. "had stiff/swollen joints."
- MX064RER. "had back pain or strain."
- MX067RER. "had chest pain."
- MX070RER. "felt shortness of breath."
- MX073RER. "had excess sweating."
- MX076RER. "had respiratory problems."
- MX079RER. "had skin problems."

Health Symptoms (Total Number of Physical Symptoms)
1992-1993 Graduate Respondent Mail Questionnaire

Coding: 1 has symptom; 2 does not have symptom.

Scaling: MX082REC was constructed by counting the number of the “has symptom” responses across the 22 items.

Reliability: Kuder-Richardson Coef. (KR-20) = .77

1992-1993 Graduate Respondent Telephone Interview

Total Number of Physical Symptoms: not available

2003-2005 Graduate Respondent Mail Questionnaire

Total Number of Physical Symptoms

IX082REC: continuous variable based on 25 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions
IX058RER/IX059RER (q15h_a_a), IX064RER/IX065RER (q15h_a_b),
IX121RER/IX122RER (q15h_a_c), IX067RER/IX068RER (q15h_a_d),
IX049RER/IX050RER (q15h_a_e), IX124RER/IX125RER (q15h_a_f),
IX052RER/IX053RER (q15h_a_g), IX127RER/IX128RER (q15h_a_h),
IX031RER/IX032RER (q15h_a_i), IX073RER/IX074RER (q15h_a_j),
IX022RER/IX023RER (q15h_a_k), IX025RER/IX026RER (q15h_a_l),
IX016RER/IX017RER (q15h_a_m), IX130RER/IX131RER (q15h_a_n),
IX034RER/IX035RER (q15h_a_o), IX133RER/IX134RER (q15h_a_p),
IX136RER/IX137RER (q15h_a_q), IX139RER/IX140RER (q15h_a_r),
IX037RER/IX038RER (q15h_a_s), IX070RER/IX071RER (q15h_a_t),
IX079RER/IX080RER (q15h_a_u), IX061RER/IX062RER (q15h_a_v),
IX019RER/IX020RER (q15h_a_w), IX046RER/IX047RER (q15h_a_x),
IX055RER/IX056RER (q15h_a_y)

How often have you had this symptom in the past six months?

IX059RER. “Aching muscles”

IX065RER. “Back pain/strain”

IX122RER. “Bone pains”

IX068RER. “Chest pain”

Health Symptoms (Total Number of Physical Symptoms)
2003-2005 Graduate Respondent Mail Questionnaire

IX050RER. "Constipation"
IX125RER. "Coughing/wheezing"
IX053RER. "Diarrhea"
IX128RER. "Difficulties with or painful sexual intercourse"
IX032RER. "Dizziness/faintness"
IX074RER. "Excessive sweating"
IX023RER. "Fatigue/exhaustion"
IX026RER. "Headache"
IX017RER. "Lack of energy"
IX131RER. "Neck and/or shoulder pain"
IX035RER. "Numbness"
IX134RER. "Pain in your hands/wrists"
IX137RER. "Pain in your ankles/knees"
IX140RER. "Palpitations (feeling your heart pound or race)"
IX038RER. "Ringing in ears"
IX071RER. "Shortness of breath"
IX080RER. "Skin problems"
IX062RER. "Stiff/swollen joints"
IX020RER. "Trouble sleeping"
IX047RER. "Upset stomach"
IX056RER. "Urination problems"

Coding: 1 have not had; 2 monthly or less often; 3 about once a week; 4 daily or more often; -3 refused.

Scaling: IX082REC was constructed by counting the number of the "has symptom" responses (coding \geq 2) across the 25 items if at least one item received a valid response. The variable is coded as -2 if none of the items received a valid response.

Reliability: Kuder-Richardson Coef. (KR-20) = .83

Note: Dichotomous variables, IX058RER, IX064RER, IX121RER, IX067RER, IX049RER, IX124RER, IX052RER, IX127RER, IX031RER, IX073RER, IX022RER, IX025RER, IX016RER, IX130RER, IX034RER, IX133RER, IX136RER, IX139RER, IX037RER, IX070RER, IX079RER, IX061RER, IX019RER, IX046RER, and IX055RER were created from the original items listed above (with coding 1=have had symptoms, 2=have not had symptom, and -3=refused). The Kuder-Richardson Coefficient was calculated based on the dichotomous variables with refusals treated as missing.

IX082RED: number of physical symptom questions answered
= 0 if no physical symptom question answered
= 1-25 if one to twenty-five items answered

2003-2005 Graduate Respondent Telephone Interview

Total Number of Physical Symptoms: not available

1993-1994 Sibling Respondent Mail Questionnaire

Total Number of Physical Symptoms

NX102RER: continuous variable based on 28 items

Items: 1993-4 Sibling Respondent Mail Questionnaire, Questions NX045RER (10Aa, scn2), NX047RER (10Ab), NX049RER (10Ac), NX051RER (10Ad), NX053RER (10Ae), NX055RER (10Af), NX057RER (10Ag), NX059RER (10Ah), NX061RER (10Ai), NX063RER (10Aj), NX065RER (10Ak), NX067RER (10Al), NX069RER (10Am), NX071RER (10An), NX073RER (10Ao), NX075RER (10Ap), NX077RER (10Aq), NX079RER (10Ar), NX081RER (10As), NX083RER (10At), NX085RER (10Au), NX087RER (10Av), NX089RER (10Aw), NX091RER (10Ax), NX093RER (10Ay), NX095RER (10Az), NX097RER (10A2), NX099RER (10B3, a10B3)

How often in the past have you had

- NX045RER. "a lack of energy in the past six months?"
- NX047RER. "trouble sleeping in the past six months?"
- NX049RER. "fatigue/exhaustion in the past six months?"
- NX051RER. "headaches in the past six months?"
- NX053RER. "visual problems in the past six months?"
- NX055RER. "dizziness/faintness in the past six months?"
- NX057RER. "numbness in the past six months?"
- NX059RER. "ringing in ears in the past six months?"
- NX061RER. "nausea in the past six months?"
- NX063RER. "vomiting in the past six months?"
- NX065RER. "upset stomach in the past six months?"
- NX067RER. "constipation in the past six months?"
- NX069RER. "diarrhea in the past six months?"
- NX071RER. "urination problems in the past six months?"
- NX073RER. "aching muscles in the past six months?"
- NX075RER. "stiff/swollen joints in the past six months?"
- NX077RER. "back pain/strain in the past six months?"
- NX079RER. "chest pain in the past six months?"
- NX081RER. "shortness of breath in the past six months?"
- NX083RER. "excessive sweating in the past six months?"

Health Symptoms (Total Number of Physical Symptoms)
1993-1994 Sibling Respondent Mail Questionnaire

NX085RER. "respiratory problems in the past six months?"
NX087RER. "skin problems in the past six months?"
NX089RER. "coughing/wheezing in the past six months?"
NX091RER. "bone pains in the past six months?"
NX093RER. "palpitations in the past six months?"
NX095RER. "painful sexual intercourse in the past six months?"
NX097RER. "difficulties with sexual intercourse in the past six months?"
NX099RER. "other symptoms." [Listed; see Notes below.]

Coding: The variables that comprise this scale are coded: 0 have not had; 1 monthly or less often; 2 about once a week; 3 daily or more often; -3 not ascertained/refused (including all 23 original WLS graduate sample members who are also siblings).

Scaling: NX102RER was constructed by counting the number of items with code 1 to 3 (having symptoms of any frequency). Cases with refusal/not ascertained (including 23 original WLS graduate sample members) were tallied as "no symptoms".

Reliability: Kuder-Richardson Coef. (KR-20) = .82

Notes: NX045RER is a constructed variable based on questions 10Aa and scn2. A complete list of the "other symptoms" that make up NX099RER is available in the 1993-4 Sibling Respondent Mail Questionnaire codebook. The total number of symptoms possible for original WLS graduate sample members is 22 while for sibling sample members the number is 28.

1993-1994 Sibling Respondent Telephone Interview

Total Number of Physical Symptoms: not available

2004-2007 Sibling Respondent Mail Questionnaire

Total Number of Physical Symptoms

DX082REC: continuous variable based on 25 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions
DX058RER/DX059RER (q15h_a_a), DX064RER/DX065RER (q15h_a_b),
DX121RER/DX122RER (q15h_a_c), DX067RER/DX068RER (q15h_a_d),

Health Symptoms (Total Number of Physical Symptoms)
2004-2007 Sibling Respondent Mail Questionnaire

DX049RER/DX050RER (q15h_a_e), DX124RER/DX125RER (q15h_a_f),
DX052RER/DX053RER (q15h_a_g), DX127RER/DX128RER (q15h_a_h),
DX031RER/DX032RER (q15h_a_i), DX073RER/DX074RER (q15h_a_j),
DX022RER/DX023RER (q15h_a_k), DX025RER/DX026RER (q15h_a_l),
DX016RER/DX017RER (q15h_a_m), DX130RER/DX131RER (q15h_a_n),
DX034RER/DX035RER (q15h_a_o), DX133RER/DX134RER (q15h_a_p),
DX136RER/DX137RER (q15h_a_q), DX139RER/DX140RER (q15h_a_r),
DX037RER/DX038RER (q15h_a_s), DX070RER/DX071RER (q15h_a_t),
DX079RER/DX080RER (q15h_a_u), DX061RER/DX062RER (q15h_a_v),
DX019RER/DX020RER (q15h_a_w), DX046RER/DX047RER (q15h_a_x),
DX055RER/DX056RER (q15h_a_y)

How often have you had this symptom in the past six months?

DX059RER. "Aching muscles"
DX065RER. "Back pain/strain"
DX122RER. "Bone pains"
DX068RER. "Chest pain"
DX050RER. "Constipation"
DX125RER. "Coughing/wheezing"
DX053RER. "Diarrhea"
DX128RER. "Difficulties with or painful sexual intercourse"
DX032RER. "Dizziness/faintness"
DX074RER. "Excessive sweating"
DX023RER. "Fatigue/exhaustion"
DX026RER. "Headache"
DX017RER. "Lack of energy"
DX131RER. "Neck and/or shoulder pain"
DX035RER. "Numbness"
DX134RER. "Pain in your hands/wrists"
DX137RER. "Pain in your ankles/knees"
DX140RER. "Palpitations (feeling your heart pound or race)"
DX038RER. "Ringing in ears"
DX071RER. "Shortness of breath"
DX080RER. "Skin problems"
DX062RER. "Stiff/swollen joints"
DX020RER. "Trouble sleeping"
DX047RER. "Upset stomach"
DX056RER. "Urination problems"

Coding: 1 have not had; 2 monthly or less often; 3 about once a week; 4 daily or more often; -3 refused.

Scaling: DX082REC was constructed by counting the number of the "has symptom" responses (coding \geq 2) across the 25 items if at least one item received a valid response. The variable is coded as -2 if none of the items received a valid response.

Health Symptoms (Total Number of Physical Symptoms)
2004-2007 Sibling Respondent Mail Questionnaire

Reliability: Kuder-Richardson Coef. (KR-20) = .84

Note: Dichotomous variables, DX058RER, DX064RER, DX121RER, DX067RER, DX049RER, DX124RER, DX052RER, DX127RER, DX031RER, DX073RER, DX022RER, DX025RER, DX016RER, DX130RER, DX034RER, DX133RER, DX136RER, DX139RER, DX037RER, DX070RER, DX079RER, DX061RER, DX019RER, DX046RER, and DX055RER were created from the original items listed above (with coding 1=have had symptoms, 2=have not had symptom, and -3=refused). The Kuder-Richardson Coefficient was calculated based on the dichotomous variables with refusals treated as missing.

DX082RED: number of physical symptom questions answered
= 0 if no physical symptom question answered
= 1-25 if one to twenty-five items answered

2004-2007 Sibling Respondent Telephone Interview

Total Number of Physical Symptoms: not available

Source

TK

Selected Studies Using Health Symptoms Scale

- Carr, D. (2002). Socioeconomic background and midlife health in the United States. In S. Crystal, & D. Shea (Eds.), *Annual review of gerontology and geriatrics, volume 22: Economic outcomes in later life: Public policy, health, and cumulative advantage*. (pp. 155-183). New York, NY: Springer.
- Miech, R. A., & Hauser, R. M. (2001). Socioeconomic status (SES) and health at midlife: A comparison of educational attainment with occupation-based indicators. *Annals of Epidemiology*, 11(2), 75-84.

SF12 Physical and Mental Health Indices

1992-1993 Graduate Respondent Mail Questionnaire

SF12 Indices: not available

1992-1993 Graduate Respondent Telephone Interview

SF12 Indices: not available

2003-2005 Graduate Respondent Mail Questionnaire

PCS-12: SF-12 Physical Component Summary

IXSF1REC: continuous variable based on 12 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions GX201RE (x1), IXCH01RE (q7h_a), IXCH02RE (q7h_b), IX401RER (q9h_a), IX402RER (q9h_b), IX403RER (q10h_a), IX404RER (q10h_b), IX405RER (q11h), IX406RER (q12h_a), IX407RER (q12h_b), IX408RER (q12h_c), IX409RER (q13h)

GX201RE. "In general, would you say your health is excellent, very good, good, fair, or poor?" (from the Respondent Telephone Interview).

Coding: 1 excellent; 2 very good; 3 good; 4 fair; 5 poor; -1 don't know; -3 refused.

During a typical day, does your health now limit you in these activities?

IXCH01RE. "moderate activities (such as moving a table, pushing a vacuum cleaner, bowling, or playing golf)?"

IXCH02RE. "climbing several flights of stairs?"

Coding: 1 limited a lot; 2 limited a little; 3 not limited at all; -3 refused.

SF12 Physical and Mental Health Indices
2003-2005 Graduate Respondent Mail Questionnaire

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

IX401RER. "Accomplished less than you would like"

IX402RER. "Were limited in the kind of work"

Coding: 1 yes; 2 no; -1 don't know; -3 refused.

During the past four 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)?

IX403RER. "Accomplished less than you would like"

IX404RER. "Did work or other activities less carefully than usual"

Coding: 1 yes; 2 no; -1 don't know; -3 refused.

During the past four weeks,

IX405RER. "how much did pain interfere with your normal work (including both work outside the home and housework)?"

Coding: 1 not at all; 2 a little bit; 3 moderately; 4 quite a bit; 5 extremely; -3 refused.

How much of the time during the past 4 weeks

IX406RER. "have you felt calm and peaceful?"

IX407RER. "did you have a lot of energy?"

IX408RER. "have you felt downhearted and blue?"

Coding: 1 all of the time; 2 most of the time; 3 a good bit of the time; 4 some of the time; 5 a little of the time; 6 none of the time; -3 refused.

During the past four weeks,

IX409RER. "how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc...)?"

Coding: 1 all of the time; 2 most of the time; 3 some of the time; 4 a little of the time; 5 none of the time; -3 refused.

SF12 Physical and Mental Health Indices
2003-2005 Graduate Respondent Mail Questionnaire

Scaling: IXSF1REC was constructed from the above twelve items using the physical regression weights from the 2nd edition of SF-12 (Ware, Kosinski & Keller 1995). All twelve items must have valid responses for PCS-12 to be computed. The variable is coded as -2 if any of the twelve items is missing. GX201R1, IX405RER, IX406RER, and IX407RER were reverse coded in the creation of this variable.

Reliability: INAP.

IXSF3REC: number of SF-12 items answered.

= 0 if no SF-12 item answered

= 1-12 if one to twelve items answered

MCS-12: SF-12 Mental Component Summary

IXSF2REC: continuous variable based on 12 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions GX201RE (x1), IXCH01RE (q7h_a), IXCH02RE (q7h_b), IX401RER (q9h_a), IX402RER (q9h_b), IX403RER (q10h_a), IX404RER (q10h_b), IX405RER (q11h), IX406RER (q12h_a), IX407RER (q12h_b), IX408RER (q12h_c), IX409RER (q13h)

GX201RE. "In general, would you say your health is excellent, very good, good, fair, or poor?" (from the Respondent Telephone Interview).

Coding: 1 excellent; 2 very good; 3 good; 4 fair; 5 poor; -1 don't know; -3 refused.

During a typical day, does your health now limit you in these activities?

IXCH01RE, "moderate activities (such as moving a table, pushing a vacuum cleaner, bowling, or playing golf)?"

IXCH02RE. "climbing several flights of stairs?"

Coding: 1 limited a lot; 2 limited a little; 3 not limited at all; -3 refused.

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

IX401RER. "Accomplished less than you would like"

IX402RER. "Were limited in the kind of work"

Coding: 1 yes; 2 no; -1 don't know; -3 refused.

SF12 Physical and Mental Health Indices
2003-2005 Graduate Respondent Mail Questionnaire

During the past four 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)?

IX403RER. “Accomplished less than you would like”

IX404RER. “Did work or other activities less carefully than usual”

Coding: 1 yes; 2 no; -1 don’t know; -3 refused.

During the past four weeks,

IX405RER. “how much did pain interfere with your normal work (including both work outside the home and housework)?”

Coding: 1 not at all; 2 a little bit; 3 moderately; 4 quite a bit; 5 extremely; -3 refused.

How much of the time during the past 4 weeks

IX406RER. “have you felt calm and peaceful?”

IX407RER. “did you have a lot of energy?”

IX408RER. “have you felt downhearted and blue?”

Coding: 1 all of the time; 2 most of the time; 3 a good bit of the time; 4 some of the time; 5 a little of the time; 6 none of the time; -3 refused.

During the past four weeks,

IX409RER. “how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc...)?”

Coding: 1 all of the time; 2 most of the time; 3 some of the time; 4 a little of the time; 5 none of the time; -3 refused.

Scaling: IXSF2REC was constructed from the above twelve items using the mental regression weights from the 2nd edition of SF-12 (Ware, Kosinski & Keller 1995). All twelve items must have valid responses for MCS-12 to be computed. The variable is coded as -2 if any of the twelve items is missing. GX201R1, IX405RER, IX406RER, and IX407RER were reverse coded in the creation of this variable.

Reliability: INAP.

IXSF3REC: number of SF-12 items answered.

SF12 Physical and Mental Health Indices
2003-2005 Graduate Respondent Mail Questionnaire

= 0 if no SF-12 item answered
= 1-12 if one to twelve items answered

2003-2005 Graduate Respondent Telephone Interview

SF12 Indices: not available

1993-1994 Sibling Respondent Mail Questionnaire

SF12 Indices: not available

1993-1994 Sibling Respondent Telephone Interview

SF12 Indices: not available

2004-2007 Sibling Respondent Mail Questionnaire

PCS-12: SF-12 Physical Component Summary

DXSF1REC: continuous variable based on 12 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions CX201RE (x1), DXCH01RE (q7h_a), DXCH02RE (q7h_b), DX401RER (q9h_a), DX402RER (q9h_b), DX403RER (q10h_a), DX404RER (q10h_b), DX405RER (q11h), DX406RER (q12h_a), DX407RER (q12h_b), DX408RER (q12h_c), DX409RER (q13h)

CX201RE. "In general, would you say your health is excellent, very good, good, fair, or poor?" (from the Sibling Telephone Interview).

Coding: 1 excellent; 2 very good; 3 good; 4 fair; 5 poor; -1 don't know; -3 refused.

SF12 Physical and Mental Health Indices
2004-2007 Sibling Respondent Mail Questionnaire

During a typical day, does your health now limit you in these activities?

DXCH01RE, “moderate activities (such as moving a table, pushing a vacuum cleaner, bowling, or playing golf)?”
DXCH02RE. “climbing several flights of stairs?”

Coding: 1 limited a lot; 2 limited a little; 3 not limited at all; -3 refused.

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

DX401RER. “Accomplished less than you would like”
DX402RER. “Were limited in the kind of work”

Coding: 1 yes; 2 no; -1 don’t know; -3 refused.

During the past four 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)?

DX403RER. “Accomplished less than you would like”
DX404RER. “Did work or other activities less carefully than usual”

Coding: 1 yes; 2 no; -1 don’t know; -3 refused.

During the past four weeks,

DX405RER. “how much did pain interfere with your normal work (including both work outside the home and housework)?”

Coding: 1 not at all; 2 a little bit; 3 moderately; 4 quite a bit; 5 extremely; -3 refused.

How much of the time during the past 4 weeks

DX406RER. “have you felt calm and peaceful?”

DX407RER. “did you have a lot of energy?”

DX408RER. “have you felt downhearted and blue?”

Coding: 1 all of the time; 2 most of the time; 3 a good bit of the time; 4 some of the time; 5 a little of the time; 6 none of the time; -3 refused.

During the past four weeks,

SF12 Physical and Mental Health Indices
2004-2007 Sibling Respondent Mail Questionnaire

DX409RER. “how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc...)?”

Coding: 1 all of the time; 2 most of the time; 3 some of the time; 4 a little of the time; 5 none of the time; -3 refused.

Scaling: DXSF1REC was constructed from the above twelve items using the physical regression weights from the 2nd edition of SF-12 (Ware, Kosinski & Keller 1995). All twelve items must have valid responses for PCS-12 to be computed. The variable is coded as -2 if any of the twelve items is missing. CX201R1, DX405RER, DX406RER, and DX407RER were reverse coded in the creation of this variable.

Reliability: INAP.

DXSF3REC: number of SF-12 items answered.
= 0 if no SF-12 item answered
= 1-12 if one to twelve items answered

MCS-12: SF-12 Mental Component Summary

DXSF2REC: continuous variable based on 12 items

Items: 2003-5 Graduate Respondent Mail Questionnaire, Questions CX201RE (x1), DXCH01RE (q7h_a), DXCH02RE (q7h_b), DX401RER (q9h_a), DX402RER (q9h_b), DX403RER (q10h_a), DX404RER (q10h_b), DX405RER (q11h), DX406RER (q12h_a), DX407RER (q12h_b), DX408RER (q12h_c), DX409RER (q13h)

CX201RE. “In general, would you say your health is excellent, very good, good, fair, or poor?” (from the Respondent Telephone Interview).

Coding: 1 excellent; 2 very good; 3 good; 4 fair; 5 poor; -1 don’t know; -3 refused.

During a typical day, does your health now limit you in these activities?

DXCH01RE, “moderate activities (such as moving a table, pushing a vacuum cleaner, bowling, or playing golf) ?”

DXCH02RE. “climbing several flights of stairs?”

Coding: 1 limited a lot; 2 limited a little; 3 not limited at all; -3 refused.

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

SF12 Physical and Mental Health Indices
2004-2007 Sibling Respondent Mail Questionnaire

DX401RER. “Accomplished less than you would like”

DX402RER. “Were limited in the kind of work”

Coding: 1 yes; 2 no; -1 don’t know; -3 refused.

During the past four 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)?

DX403RER. “Accomplished less than you would like”

DX404RER. “Did work or other activities less carefully than usual”

Coding: 1 yes; 2 no; -1 don’t know; -3 refused.

During the past four weeks,

DX405RER. “how much did pain interfere with your normal work (including both work outside the home and housework)?”

Coding: 1 not at all; 2 a little bit; 3 moderately; 4 quite a bit; 5 extremely; -3 refused.

How much of the time during the past 4 weeks

DX406RER. “have you felt calm and peaceful?”

DX407RER. “did you have a lot of energy?”

DX408RER. “have you felt downhearted and blue?”

Coding: 1 all of the time; 2 most of the time; 3 a good bit of the time; 4 some of the time; 5 a little of the time; 6 none of the time; -3 refused.

During the past four weeks,

DX409RER. “how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc...)?”

Coding: 1 all of the time; 2 most of the time; 3 some of the time; 4 a little of the time; 5 none of the time; -3 refused.

Scaling: DXSF2REC was constructed from the above twelve items using the mental regression weights from the 2nd edition of SF-12 (Ware, Kosinski & Keller 1995). All twelve items must have valid responses for MCS-12 to be computed. The variable is

SF12 Physical and Mental Health Indices
2004-2007 Sibling Respondent Mail Questionnaire

coded as -2 if any of the twelve items is missing. CX201R1, DX405RER, DX406RER, and DX407RER were reverse coded in the creation of this variable.

Reliability: INAP

DXSF3REC: number of SF-12 items answered.
= 0 if no SF-12 item answered
= 1-12 if one to twelve items answered

2004-2007 Sibling Respondent Telephone Interview

SF12 Indices: not available

Source

Ware John. E., Mark Kosinski, and Susan D. Keller. 1995. SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales. Second Edition. Boston, MA: The Health Institute, New England Medical Center.

Selected Studies Using SF12 Physical and Mental Health Indices

TK

Body Mass Index

1992-1993 Graduate Respondent Mail Questionnaire

Body Mass Index

MX011REC: continuous variable based on 2 items

Items: 1992-3 Mail Questionnaire, Questions MX009RER (6), MX010REC (7a, 7b, 7c, 7d)

MX009RER. "How much do you weigh?"

MX010REC. "How tall are you?"

Coding: MX009RER is coded in pounds; -3 not ascertained/refused. MX010REC is coded in inches; -3 not ascertained/refused (two decimal places are implied in the data file). MX011REC is one's body mass index, based on the formula BMI equals kilograms/meters squared.

Scaling: MX011REC was constructed using the formula: $BMI = (\text{weight in pounds} * 703) / \text{height in inches squared}$, or $MX011REC = (MX009RER * 703) / MX010REC^2$.

Reliability: INAP

Notes: MX010REC is a constructed variable based on questions 7a, 7b, 7c and 7d. In the public data file, MX009RER is bottom-coded at 100 and top-coded at 300; MX010REC is bottom-coded at 5500 and top-coded at 7700. In the public data file, MX011REC was created using bottom- and top-coded values for MX009RER and MX010REC.

1992-1993 Graduate Respondent Telephone Interview

Body Mass Index: not available

2003-2005 Graduate Respondent Mail Questionnaire

Body Mass Index

IX011REC: continuous variable based on 2 items

Items: 2003-4 Mail Questionnaire, Questions MX009RER (q16hb), IX010FRE (q17hb_f), IX010IRE (q17hb_i)

IX009RER. "How much do you weigh in pounds?"

IX010FRE. "How tall are you?" feet component

IX010IRE. "How tall are you?" inches component

Coding: IX009RER is coded in pounds; -1 don't know; -3 refused; -4 not ascertained. IX010FRE is coded in feet; -3 refused; -4 not ascertained. IX010IRE is coded in inches; -3 refused; -4 not ascertained. IX011REC is one's body mass index, based on the formula BMI equals kilograms/meters squared.

Scaling: IX011REC was constructed using the formula: $BMI = (\text{weight in kg}) / (\text{height in meter squared})$, or $IX011REC = (IX009RER * .4536) / [(IX010FRE * 12 + IX010IRE) * .0254]^2$.

Reliability: INAP

Notes: In the public data file, IX009RER is bottom-coded at 100 and top-coded at 300; IX011REC is bottom-coded at 19 and top-coded at 45. IX010FRE and IX010IRE are not available on public release.

2003-2005 Graduate Respondent Telephone Interview

Body Mass Index: not available

1993-1994 Sibling Respondent Mail Questionnaire

Body Mass Index

NX025REC: continuous variable based on 2 items

Items: 1993-4 Mail Questionnaire, Questions NX023RER (6), NX024RER (7a, 7b, 7c, 7d)

Body Mass Index
1993-1994 Sibling Respondent Mail Questionnaire

NX023RER. "How much do you weigh?"

NX024RER. "How tall are you?"

Coding: NX023RER is coded in pounds; -3 not ascertained/refused.
NX025RER is coded in inches; -3 not ascertained/refused (two decimal places are implied in the data file). NX025REC is coded in body mass index units, based on the formula BMI equals kilograms/meters squared.

Scaling: NX025REC was constructed using the formula:
BMI = (weight in pounds * 703) / height in inches squared; namely,
NX025REC = (NX023RER * 703) / NX024RER²

Reliability: INAP

Notes: NX024REC is a constructed variable based on questions 7a, 7b, 7c and 7d. In the public data file, NX023RER is bottom-coded at 100 and top-coded at 300; NX024RER is bottom-coded at 5500 and top-coded at 7700. In the public data file, NX025RER was created using bottom- and top-coded values for NX023RER and NX024RER.

1993-1994 Sibling Respondent Telephone Interview

Body Mass Index: not available

2004-2007 Sibling Respondent Mail Questionnaire

Body Mass Index

DX011REC: continuous variable based on 2 items

Items: 2005 Mail Questionnaire, Questions DX009RER (q16hb), DX010FRE (q17hb_f), DX010IRE (q17hb_i)

DX009RER. "How much do you weigh in pounds?"

DX010FRE. "How tall are you?" feet component

DX010IRE. "How tall are you?" inches component

Body Mass Index
2004-2007 Sibling Respondent Mail Questionnaire

Coding: DX009RER is coded in pounds; -1 don't know; -2 inappropriate; -3 refused; -4 not ascertained. DX010FRE is coded in feet; -3 refused; -2 inappropriate; -4 not ascertained. DX010IRE is coded in inches; -3 refused; -2 inappropriate; -4 not ascertained. DX011REC is one's body mass index, based on the formula BMI equals kilograms/meters squared.

Scaling: DX011REC was constructed using the formula: $BMI = (\text{weight in kg}) / (\text{height in meter squared})$, or $DX011REC = (DX009RER * .4536) / [(DX010FRE*12 + DX010IRE) * .0254]^2$.

Reliability: INAP

Notes: In the public data file, DX009RER is bottom-coded at 100 and top-coded at 300; DX011REC is bottom-coded at 19 and top-coded at 45. DX010FRE and DX010IRE are not available on public release.

2004-2007 Sibling Respondent Telephone Interview

Body Mass Index: not available

Source

National Heart, Lung, and Blood Institute [NHLBI]. 1998. *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. (National Institutes of Health Publication, 98-4083). Bethesda, MD: National Institutes of Health.

Selected Studies Using BMI Scale

Carr, D. (2002). Socioeconomic background and midlife health in the United States. In S. Crystal, & D. Shea (Eds.), *Annual review of gerontology and geriatrics, volume 22: Economic outcomes in later life: Public policy, health, and cumulative advantage*. (pp. 155-183). New York, NY: Springer.

Health Utilities Index Mark 3

1992-1993 Graduate Respondent Mail Questionnaire

HUI3: not available

1992-1993 Graduate Respondent Telephone Interview

HUI3: not available

2003-2005 Graduate Respondent Mail Questionnaire

HUI3: not available

2003-2005 Graduate Respondent Telephone Interview

This is the first round of data collection for which graduate respondents were asked health-related items during the telephone interview. For health items prior to 2004, please see the 1992-1993 graduate mail questionnaire. The Health Utility Index used by WLS is the self-assessed, 4-week health-status recall, US English version (HUI23S4US.40Q). The coding and scoring of responses for HUI3 can be found at <http://www.healthutilities.com/hui3.htm>.

Single-Attribute Scales

Single-attribute scales measure within-attribute morbidity, with a score of 0.00 representing the worst level and 1.00 the best.

1. HUI3 Vision Level/Vision Score

Health Utilities Index
2003-2005 Graduate Respondent Telephone Interview

GX203LRE/GX203SRE: GX203SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions GX301RE (x2), GX302RE (x3), GX303RE (x4), GX304RE (x5), GX305RE (x6)

During the past 4 weeks, have you been able to see

GX301RE. “well enough to read ordinary newsprint without glasses or contact lenses?”

GX302RE. “well enough to read ordinary newsprint with glasses or contact lenses?”

GX303RE. “at all?”

GX304RE. “well enough to recognize a friend on the other side of the street without glasses or contact lenses?”

GX305RE. “well enough to recognize a friend on the other side of the street with glasses or contact lenses?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: GX301RE = 1 for GX302RE, GX301RE = 1 or GX302RE = 1 for GX303RE, GX303RE = 2 for GX304RE, GX304RE = 1 or GX303RE = 2 for GX305RE)

Scaling: GX203LRE was coded into one of the following levels based on the above 5 items:

1. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, without glasses or contact lenses.
2. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses.
3. Able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses.
4. Able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses.
5. Unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses.
6. Unable to see at all.

If more than one item was missing, no score was computed and the variable was coded -2.

GX203SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX203SRE = 1.00 if GX203LRE = 1; GX203SRE = 0.95 if GX203LRE = 2;
GX203SRE = 0.73 if GX203LRE = 3; GX203SRE = 0.59 if GX203LRE = 4;

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$GX203SRE = 0.38$ if $GX203LRE = 5$; $GX203SRE = 0.00$ if $GX203LRE = 6$;
 $GX203SRE = -2$ if $GX203LRE = -2$

Reliability: INAP

Note: $GX203LRE$ and $GX203SRE$ are constructed variables based on questions x2, x3, x4, x5, and x6.

2. HUI3 Hearing Level/Hearing Score

$GX204LRE/GX204SRE$: $GX204SRE$ is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions $GX306RE$ (x7), $GX307RE$ (x8), $GX308RE$ (x10), $GX309RE$ (x11)

During the past 4 weeks, have you been able to hear

$GX306RE$. “what is said in a group conversation with at least three other people, without a hearing aid?”

$GX307RE$. “what is said in a group conversation with at least three other people with a hearing aid?”

$GX308RE$. “what is said in a conversation with one other person in a quiet room without a hearing aid?”

$GX309RE$. “what is said in a conversation with one other person in a quiet room with a hearing aid?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: $GX306RE = 1$ for $GX307RE$ and $GX308RE$, $GX306RE = 1$ or $GX308RE = 1$ for $GX309RE$)

Scaling: $GX204LRE$ was coded into one of the following levels based on the above 4 items:

1. Able to hear what is said in a group conversation with at least three other people, without a hearing aid.
2. Able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but requires a hearing aid to hear what is said in a group conversation with at least three other people.
3. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, and able to hear what is said in a group conversation with at least three other people, with a hearing aid.

4. Able to hear what is said in a conversation with one other person in a quiet room, without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
5. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
6. Unable to hear at all.

If more than one item was missing, no score was computed and the variable was coded -2.

GX204SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX204SRE = 1.00 if GX204LRE = 1; GX204SRE = 0.86 if GX204LRE = 2;
GX204SRE = 0.71 if GX204LRE = 3; GX204SRE = 0.48 if GX204LRE = 4;
GX204SRE = 0.32 if GX204LRE = 5; GX204SRE = 0.00 if GX204LRE = 6;
GX204SRE = -2 if GX204LRE=-2

Reliability: INAP

Note: GX204LRE and GX204SRE are constructed variable based on questions x7, x8, x10, and x11.

3. HUI3 Speech Level/Speech Score

GX205LRE/GX205SRE: GX205SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions GX310RE (x12), GX311RE (x13), GX312RE (x14), GX313RE (x15), GX314RE (x16)

During the past 4 weeks,

GX310RE. “have people who do not know you understood you completely when you speak?”

GX311RE. “have people who do not know you understood you partially when you speak?”

GX312RE. “have people who know you well understood you completely when you speak?”

GX313RE. “have people who know you well understood you partially when you speak?”

GX314RE. “have you been able to speak at all?”

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Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: GX310RE = 1 for GX311RE and GX312RE, GX310RE = 1 or GX312RE = 1 for GX313RE, GX310RE = 1 or GX312RE = 1 or GX313RE = 1 for GX314RE)

Scaling: GX205LRE was coded into one of the following levels based on the above 5 items:

1. Able to be understood completely when speaking with strangers or friends
2. Able to be understood partially when speaking with strangers but able to be understood completely when speaking with people who know me well.
3. Able to be understood partially when speaking with strangers or people who know me well.
4. Unable to be understood when speaking with strangers but able to be understood partially by people who know me well.
5. Unable to be understood when speaking to other people (or unable to speak at all).

If more than one item was missing, no score was computed and the variable was coded -2.

GX205SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX205SRE = 1.00 if GX205LRE = 1; GX205SRE = 0.82 if GX205LRE = 2;
GX205SRE = 0.67 if GX205LRE = 3; GX205SRE = 0.41 if GX205LRE = 4;
GX205SRE = 0.00 if GX205LRE = 5; GX205SRE = -2 if GX205LRE = -2

Reliability: INAP

Note: GX205LRE and GX205SRE are constructed variable based on questions x12, x13, x14, x15, and x16.

4. HUI3 Ambulation Level/Ambulation Score

GX206LRE/GX206SRE: GX206SRE is a continuous variable constructed from the following 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions GX315RE (x17), GX316RE (x18), GX317RE (x19), GX318RE (x20), GX319RE (x21), GX320RE (x22), GX321RE (x23), GX322RE (x24)

During the past 4 weeks,

GX315RE. "have you been able to bend, lift, jump and run without difficulty and without help or equipment of any kind?"

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- GX316RE. “have you been able to walk around the neighborhood without difficulty and without help or equipment of any kind?”
- GX317RE. “have you been able to walk around the neighborhood with difficulty but without help or equipment of any kind?”
- GX318RE. “have you been able to walk at all?”
- GX319RE. “have you needed mechanical support, such as braces or a cane or crutches, to be able to walk around the neighborhood?”
- GX320RE. “have you needed the help of another person to walk?”
- GX321RE. “have you needed a wheelchair to get around the neighborhood?”
- GX322RE. “have you needed the help of another person to get around in the wheelchair?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: GX315RE = 1 for GX316RE, GX315RE = 1 or GX316RE = 1 for GX317RE, GX315RE = 1 or GX316RE = 1 or GX317RE = 1 for GX318RE, GX321RE, and GX322RE, GX315RE = 1 or GX316RE = 1 or GX317RE = 1 or GX318RE = 1 for GX319RE and GX320RE;); -3 refused

Scaling: GX206LRE was coded into one of the following levels based on the above 8 items:

1. Able to walk around the neighbourhood without difficulty, and without walking equipment.
2. Able to walk around the neighbourhood with difficulty; but does not require walking equipment or the help of another person.
3. Able to walk around the neighbourhood with walking equipment, but without the help of another person.
4. Able to walk only short distances with walking equipment, and requires a wheelchair to get around the neighbourhood.
5. Unable to walk alone, even with walking equipment. Able to walk short distances with the help of another person, and requires a wheelchair to get around the neighbourhood.
6. Cannot walk at all.

If more than one item was missing, no score was computed and the variable was coded -2.

GX206SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX206SRE = 1.00 if GX206LRE = 1; GX206SRE = 0.73 if GX206LRE = 2;
GX206SRE = 0.67 if GX206LRE = 3; GX206SRE = 0.36 if GX206LRE = 4;
GX206SRE = 0.16 if GX206LRE = 5; GX206SRE = 0.00 if GX206LRE=6;
GX206SRE = -2 if GX206LRE = -2

Reliability: INAP

Note: GX206LRE and GX206SRE are constructed variable based on questions x17, x18, x19, x20, x21, x22, x23, and x24.

5. HUI3 Dexterity Level/Dexterity Score

GX207LRE/GX207RE: GX207SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: GX323RE (x25), GX324RE (x26), GX325RE (x27), GX326RE (x28)

During the past 4 weeks,

GX323RE. “have you had full use of both hands and 10 fingers?”

GX324RE. “have you needed the help of another person because of limitations in the use of your hands or fingers?”

GX325RE. “due to limitations in the use of your hands or fingers, have you needed the help of another person with some tasks, most tasks, or all tasks?”

GX326RE. “have you needed special equipment, for example, special tools to help with dressing or eating, because of limitations in the use of your hands or fingers?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: GX323RE = 1 for GX324RE and GX326RE, GX323RE = 1 or GX324RE=2 for GX325RE); -3 refused

Scaling: GX207LRE was coded into one of the following levels based on the above 4 items:

1. Full use of two hands and ten fingers.
2. Limitations in the use of hands or fingers, but does not require special tools or help of another person.
3. Limitations in the use of hands or fingers, is independent with use of special tools (does not require the help of another person).
4. Limitations in the use of hands or fingers, requires the help of another person for some tasks (not independent even with use of special tools).
5. Limitations in use of hands or fingers, requires the help of another person for most tasks (not independent even with use of special tools).
6. Limitations in use of hands or fingers, requires the help of another person for all tasks (not independent even with use of special tools).

If more than one item was missing, no score was computed and the variable was coded -2.

GX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX207SRE = 1.00 if GX207LRE = 1; GX207SRE = 0.88 if GX207LRE = 2;
GX207SRE = 0.73 if GX207LRE = 3; GX207SRE = 0.45 if GX207LRE = 4;
GX207SRE = 0.20 if GX207LRE = 5; GX207SRE = 0.00 if GX207LRE=6;
GX207SRE = -2 if GX207LRE = -2

Reliability: INAP

Note: GX207LRE and GX207SRE are constructed variable based on questions x25, x26, x27, and x28.

6. HUI3 Emotion Level/Emotion Score

GX208LRE/GX208RE: GX208SRE is a continuous variable constructed from the following 3 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: GX330RE (x32), GX331RE (x33), GX332RE (x34)

During the past 4 weeks,

GX330RE. “have you been feeling happy or unhappy?”

Coding: 1 happy; 2 unhappy; -1 don’t know; -3 refused.

GX331RE. “would you describe yourself as having felt happy and interested in life, or somewhat happy?”

Coding: 1 happy and interested; 2 somewhat happy; -1 don’t know; -2 inappropriate (if GX330RE = 1); -3 refused

GX332RE. “would you describe yourself as having felt somewhat unhappy, very unhappy, or so unhappy that life is not worthwhile?”

Coding: 1 somewhat unhappy; 2 very unhappy; 3 so unhappy life not worthwhile; -1 don’t know; -2 inappropriate (if GX331RE = 1 or 2); -3 refused.

Scaling: GX208LRE was coded into one of the following levels based on the above 3 items:

1. Happy and interested in life.
2. Somewhat happy.

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3. Somewhat unhappy.
 4. Very unhappy.
 5. So unhappy that life is not worthwhile.
- If more than one item was missing, no score was computed and the variable was coded -2.

GX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX207SRE = 1.00 if GX207LRE = 1; GX207SRE = 0.91 if GX207LRE = 2;
GX207SRE = 0.73 if GX207LRE = 3; GX207SRE = 0.33 if GX207LRE = 4;
GX207SRE = 0.00 if GX207LRE = 5; GX207SRE = -2 if GX207LRE = -2

Reliability: INAP

Note: GX208LRE and GX208SRE are constructed variable based on questions x32, x33, and x34.

7. HUI3 Cognition Level/Cognition Score

GX209LRE/GX209RE: GX209SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: GX336RE (x38), GX337Re (x39)

During the past 4 weeks, how would you describe your ability to

GX336RE. “remember things?”

Coding: 1 remember most things; 2 somewhat forgetful; 3 very forgetful; 4 unable to remember anything; -1 don’t know; -3 refused.

GX337RE. “think and solve day to day problems?”

Coding: 1 clearly and solve problems; 2 a little difficulty; 3 some difficulty; 4 great deal of difficulty; 5 unable to think/solve problems; -1 don’t know; -3 refused.

Scaling: GX209LRE was coded into one of the following levels based on the above 2 items:

1. Able to remember most things, think clearly and solve day to day problems.

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2. Able to remember most things, but have a little difficulty when trying to think and solve day to day problems.
3. Somewhat forgetful, but able to think clearly and solve day to day problems.
4. Somewhat forgetful, and have a little difficulty when trying to think or solve day to day problems.
5. Very forgetful, and have great difficulty when trying to think or solve day to day problems.
6. Unable to remember anything at all, and unable to think or solve day to day problems.

If more than one item was missing, no score was computed and the variable was coded -2.

GX209SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX209SRE = 1.00 if GX209LRE = 1; GX209SRE = 0.86 if GX209LRE = 2;
GX209SRE = 0.92 if GX209LRE = 3; GX209SRE = 0.70 if GX209LRE = 4;
GX209SRE = 0.32 if GX209LRE = 5; GX209SRE = 0.00 if GX209LRE=6;
GX209SRE = -2 if GX209LRE = -2

Reliability: INAP

Note: GX209LRE and GX209SRE are constructed variable based on questions x38 and x39.

8. HUI3 Pain Level/Pain Score

GX210LRE/GX210RE: GX210SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: GX338RE (x40), GX339RE (x41)

During the past 4 weeks,

GX338RE. “have you had any trouble with pain or discomfort?”

Coding: 1 yes; 2 no; -3 refused.

GX339RE. “how many of your activities were limited by pain or discomfort?”

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Coding: 1 none; 2 a few; 3 some; 4 most; 5 all; -1 don't know; -2 inappropriate (if GX338RE=2); -3 refused.

Scaling: GX210LRE was coded into one of the following levels based on the above 2 items:

1. Free of pain and discomfort.
2. Mild to moderate pain that prevents no activities.
3. Moderate pain that prevents a few activities.
4. Moderate to severe pain that prevents some activities.
5. Severe pain that prevents most activities.

If more than one item was missing, no score was computed and the variable was coded -2.

GX210SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

GX210SRE = 1.00 if GX210LRE = 1; GX210SRE = 0.92 if GX210LRE = 2;
GX210SRE = 0.77 if GX210LRE = 3; GX210SRE = 0.47 if GX210LRE = 4;
GX210SRE = 0.00 if GX210LRE = 5; GX210SRE = -2 if GX210LRE = -2

Reliability: INAP

Note: GX210LRE and GX210SRE are constructed variable based on questions x40 and x41.

Multi-Attribute Scale

Multi-attribute scales measure overall Health-Related Quality of Life (HRQL), with the score for dead = 0.00 and the score for perfect health = 1.00. Negative scores are possible and represent health states to be worse than dead. The lowest possible score for HUI3 is -0.36.

Health Utilities Index Mark 3 (HUI3) Summary Score

GX202ARE: continuous variable based on 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Component Dimension
Levels/Scores: GX203LRE (x2, x3, x4, x5, x6), GX204LRE (x7, x8, x10, x11),
GX205LRE (x12, x13, x14, x15, x16), GX206LRE (x17, x18, x19, x20, x21, x22, x23,
x24), GX207LRE (x25, x26, x27, x28), GX208LRE (x32, x33, x34), GX209LRE (x38,
x39), GX210LRE (x40, x41)

GX203LRE. Vision level
GX204LRE. Hearing level

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GX205LRE. Speech level
GX206LRE. Ambulation level
GX207LRE. Dexterity level
GX208LRE. Emotion level
GX209LRE. Cognition level
GX210LRE. Pain level

Coding: see the coding scheme in previous section (Single-Attribute Scales).

Scaling: GX202ARE was constructed by first converting component dimension attribute levels to attribute utility scores based on the Multi-attribute Utility Function Table and then calculating the summary score using the formula for Dead-Perfect Health Scale (see <http://www.healthutilities.com/hui3.htm>):

$$u^* = 1.371 * (\text{Vision Score} * \text{Hearing Score} * \text{Speech Score} * \text{Ambulation Score} * \text{Dexterity Score} * \text{Emotion Score} * \text{Cognition Score} * \text{Pain Score}) - 0.371$$

where

Vision Score = 1.00 if GX203LRE = 1; Vision Score = 0.98 if GX203LRE = 2;
Vision Score = 0.89 if GX203LRE = 3; Vision Score = 0.84 if GX203LRE = 4;
Vision Score = 0.75 if GX203LRE = 5; Vision Score = 0.61 if GX203LRE = 6;

Hearing Score = 1.00 if GX204LRE = 1; Hearing Score = 0.95 if GX204LFE = 2;
Hearing Score = 0.89 if GX204LRE = 3; Hearing Score = 0.80 if GX204LRE = 4;
Hearing Score = 0.74 if GX204LRE = 5; Hearing Score = 0.61 if GX204LRE = 6;

Speech Score = 1.00 if GX204LRE = 1; Speech Score = 0.94 if GX204LFE = 2;
Speech Score = 0.89 if GX204LRE = 3; Speech Score = 0.81 if GX204LRE = 4;
Speech Score = 0.68 if GX204LRE = 5;

Ambulation Score = 1.00 if GX204LRE = 1; Ambulation Score = 0.93 if GX204LFE = 2;
Ambulation Score = 0.86 if GX204LRE = 3; Ambulation Score = 0.73 if GX204LRE = 4;
Ambulation Score = 0.65 if GX204LRE = 5; Ambulation Score = 0.58 if GX204LRE = 6;

The score ranges from 0 to 1, representing dead to perfect health (negative scores are allowed with the lowest possible score of -0.36).

Reliability: α = INAPP

1993-1994 Sibling Respondent Mail Questionnaire

HUI3: not available

1993-1994 Sibling Respondent Telephone Interview

HUI3: not available

2004-2007 Sibling Respondent Mail Questionnaire

HUI3: not available

2004-2007 Sibling Respondent Telephone Interview

This is the first round of data collection for which sibling respondents were asked health-related items during the telephone interview. For health items prior to 2004, please see the 1993-1994 sibling mail questionnaire. The Health Utility Index used by WLS is the self-assessed, 4-week health-status recall, US English version (HUI23S4US.40Q). The coding and scoring of responses for HUI3 can be found at <http://www.healthutilities.com/hui3.htm>.

Single-Attribute Scales

Single-attribute scales measure within-attribute morbidity, with a score of 0.00 representing the worst level and 1.00 the best.

1. HUI3 Vision Level/Vision Score

CX203LRE/CX203SRE: CX203SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions CX301RE (x2), CX302RE (x3), CX303RE (x4), CX304RE (x5), CX305RE (x6)

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2004-2007 Sibling Respondent Mail Questionnaire

During the past 4 weeks, have you been able to see

CX301RE. “well enough to read ordinary newsprint without glasses or contact lenses?”

CX302RE. “well enough to read ordinary newsprint with glasses or contact lenses?”

CX303RE. “at all?”

CX304RE. “well enough to recognize a friend on the other side of the street without glasses or contact lenses?”

CX305RE. “well enough to recognize a friend on the other side of the street with glasses or contact lenses?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: CX301RE = 1 for CX302RE, CX301RE = 1 or CX302RE = 1 for CX303RE, CX303RE = 2 for CX304RE, CX304RE = 1 or CX303RE = 2 for CX305RE)

Scaling: CX203LRE was coded into one of the following levels based on the above 5 items:

7. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, without glasses or contact lenses.
8. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses.
9. Able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses.
10. Able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses.
11. Unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses.
12. Unable to see at all.

If more than one item was missing, no score was computed and the variable was coded -2.

CX203SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX203SRE = 1.00 if CX203LRE = 1; CX203SRE = 0.95 if CX203LRE = 2;
CX203SRE = 0.73 if CX203LRE = 3; CX203SRE = 0.59 if CX203LRE = 4;
CX203SRE = 0.38 if CX203LRE = 5; CX203SRE = 0.00 if CX203LRE = 6;
CX203SRE = -2 if CX203LRE = -2

Reliability: INAP

Note: CX203LRE and CX203SRE are constructed variables based on questions x2, x3, x4, x5, and x6.

2. HUI3 Hearing Level/Hearing Score

CX204LRE/CX204SRE: CX204SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions CX306RE (x7), CX307RE (x8), CX308RE (x10), CX309RE (x11)

During the past 4 weeks, have you been able to hear

CX306RE. “what is said in a group conversation with at least three other people, without a hearing aid?”

CX307RE. “what is said in a group conversation with at least three other people with a hearing aid?”

CX308RE. “what is said in a conversation with one other person in a quiet room without a hearing aid?”

CX309RE. “what is said in a conversation with one other person in a quiet room with a hearing aid?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: CX306RE = 1 for CX307RE and CX308RE, CX306RE = 1 or CX308RE = 1 for CX309RE)

Scaling: CX204LRE was coded into one of the following levels based on the above 4 items:

7. Able to hear what is said in a group conversation with at least three other people, without a hearing aid.
8. Able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but requires a hearing aid to hear what is said in a group conversation with at least three other people.
9. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, and able to hear what is said in a group conversation with at least three other people, with a hearing aid.
10. Able to hear what is said in a conversation with one other person in a quiet room, without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
11. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
12. Unable to hear at all.

If more than one item was missing, no score was computed and the variable was coded -2.

CX204SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX204SRE = 1.00 if CX204LRE = 1; CX204SRE = 0.86 if CX204LRE = 2;
CX204SRE = 0.71 if CX204LRE = 3; CX204SRE = 0.48 if CX204LRE = 4;
CX204SRE = 0.32 if CX204LRE = 5; CX204SRE = 0.00 if CX204LRE = 6;
CX204SRE = -2 if CX204LRE=-2

Reliability: INAP

Note: CX204LRE and CX204SRE are constructed variable based on questions x7, x8, x10, and x11.

3. HUI3 Speech Level/Speech Score

CX205LRE/CX205SRE: CX205SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions CX310RE (x12), CX311RE (x13), CX312RE (x14), CX313RE (x15), CX314RE (x16)

During the past 4 weeks,

CX310RE. “have people who do not know you understood you completely when you speak?”

CX311RE. “have people who do not know you understood you partially when you speak?”

CX312RE. “have people who know you well understood you completely when you speak?”

CX313RE. “have people who know you well understood you partially when you speak?”

CX314RE. “have you been able to speak at all?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: CX310RE = 1 for CX311RE and CX312RE, CX310RE = 1 or CX312RE = 1 for CX313RE, CX310RE =1 or CX312RE = 1 or CX313RE =1 for CX314RE)

Scaling: CX205LRE was coded into one of the following levels based on the above 5 items:

6. Able to be understood completely when speaking with strangers or friends
7. Able to be understood partially when speaking with strangers but able to be understood completely when speaking with people who know me well.
8. Able to be understood partially when speaking with strangers or people who know me well.

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9. Unable to be understood when speaking with strangers but able to be understood partially by people who know me well.
10. Unable to be understood when speaking to other people (or unable to speak at all).

If more than one item was missing, no score was computed and the variable was coded -2.

CX205SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX205SRE = 1.00 if CX205LRE = 1; CX205SRE = 0.82 if CX205LRE = 2;
CX205SRE = 0.67 if CX205LRE = 3; CX205SRE = 0.41 if CX205LRE = 4;
CX205SRE = 0.00 if CX205LRE = 5; CX205SRE = -2 if CX205LRE = -2

Reliability: INAP

Note: CX205LRE and CX205SRE are constructed variable based on questions x12, x13, x14, x15, and x16.

4. HUI3 Ambulation Level/Ambulation Score

CX206LRE/CX206SRE: CX206SRE is a continuous variable constructed from the following 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions CX315RE (x17), CX316RE (x18), CX317RE (x19), CX318RE (x20), CX319RE (x21), CX320RE (x22), CX321RE (x23), CX322RE (x24)

During the past 4 weeks,

- CX315RE. “have you been able to bend, lift, jump and run without difficulty and without help or equipment of any kind?”
- CX316RE. “have you been able to walk around the neighborhood without difficulty and without help or equipment of any kind?”
- CX317RE. “have you been able to walk around the neighborhood with difficulty but without help or equipment of any kind?”
- CX318RE. “have you been able to walk at all?”
- CX319RE. “have you needed mechanical support, such as braces or a cane or crutches, to be able to walk around the neighborhood?”
- CX320RE. “have you needed the help of another person to walk?”
- CX321RE. “have you needed a wheelchair to get around the neighborhood?”
- CX322RE. “have you needed the help of another person to get around in the wheelchair?”

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Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: CX315RE = 1 for CX316RE, CX315RE = 1 or CX316RE = 1 for CX317RE, CX315RE = 1 or CX316RE = 1 or CX317RE = 1 for CX318RE, CX321RE, and CX322RE, CX315RE = 1 or CX316RE = 1 or CX317RE = 1 or CX318RE = 1 for CX319RE and CX320RE;); -3 refused

Scaling: CX206LRE was coded into one of the following levels based on the above 8 items:

7. Able to walk around the neighbourhood without difficulty, and without walking equipment.
 8. Able to walk around the neighbourhood with difficulty; but does not require walking equipment or the help of another person.
 9. Able to walk around the neighbourhood with walking equipment, but without the help of another person.
 10. Able to walk only short distances with walking equipment, and requires a wheelchair to get around the neighbourhood.
 11. Unable to walk alone, even with walking equipment. Able to walk short distances with the help of another person, and requires a wheelchair to get around the neighbourhood.
 12. Cannot walk at all.
- If more than one item was missing, no score was computed and the variable was coded -2.

CX206SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX206SRE = 1.00 if CX206LRE = 1; CX206SRE = 0.73 if CX206LRE = 2;
CX206SRE = 0.67 if CX206LRE = 3; CX206SRE = 0.36 if CX206LRE = 4;
CX206SRE = 0.16 if CX206LRE = 5; CX206SRE = 0.00 if CX206LRE=6;
CX206SRE = -2 if CX206LRE = -2

Reliability: INAP

Note: CX206LRE and CX206SRE are constructed variable based on questions x17, x18, x19, x20, x21, x22, x23, and x24.

5. HUI3 Dexterity Level/Dexterity Score

CX207LRE/CX207RE: CX207SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: CX323RE (x25), CX324RE (x26), CX325RE (x27), CX326RE (x28)

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During the past 4 weeks,

CX323RE. “have you had full use of both hands and 10 fingers?”

CX324RE. “have you needed the help of another person because of limitations in the use of your hands or fingers?”

CX325RE. “due to limitations in the use of your hands or fingers, have you needed the help of another person with some tasks, most tasks, or all tasks?”

CX326RE. “have you needed special equipment, for example, special tools to help with dressing or eating, because of limitations in the use of your hands or fingers?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: CX323RE = 1 for CX324RE and CX326RE, CX323RE = 1 or CX324RE=2 for CX325RE); -3 refused

Scaling: CX207LRE was coded into one of the following levels based on the above 4 items:

7. Full use of two hands and ten fingers.
 8. Limitations in the use of hands or fingers, but does not require special tools or help of another person.
 9. Limitations in the use of hands or fingers, is independent with use of special tools (does not require the help of another person).
 10. Limitations in the use of hands or fingers, requires the help of another person for some tasks (not independent even with use of special tools).
 11. Limitations in use of hands or fingers, requires the help of another person for most tasks (not independent even with use of special tools).
 12. Limitations in use of hands or fingers, requires the help of another person for all tasks (not independent even with use of special tools).
- If more than one item was missing, no score was computed and the variable was coded -2.

CX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX207SRE = 1.00 if CX207LRE = 1; CX207SRE = 0.88 if CX207LRE = 2;
CX207SRE = 0.73 if CX207LRE = 3; CX207SRE = 0.45 if CX207LRE = 4;
CX207SRE = 0.20 if CX207LRE = 5; CX207SRE = 0.00 if CX207LRE=6;
CX207SRE = -2 if CX207LRE = -2

Reliability: INAP

Note: CX207LRE and CX207SRE are constructed variable based on questions x25, x26, x27, and x28.

6. HUI3 Emotion Level/Emotion Score

CX208LRE/CX208RE: CX208SRE is a continuous variable constructed from the following 3 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: CX330RE (x32), CX331RE (x33), CX332RE (x34)

During the past 4 weeks,

CX330RE. “have you been feeling happy or unhappy?”

Coding: 1 happy; 2 unhappy; -1 don’t know; -3 refused.

CX331RE. “would you describe yourself as having felt happy and interested in life, or somewhat happy?”

Coding: 1 happy and interested; 2 somewhat happy; -1 don’t know; -2 inappropriate (if CX330RE = 1); -3 refused

CX332RE. “would you describe yourself as having felt somewhat unhappy, very unhappy, or so unhappy that life is not worthwhile?”

Coding: 1 somewhat unhappy; 2 very unhappy; 3 so unhappy life not worthwhile; -1 don’t know; -2 inappropriate (if CX331RE = 1 or 2); -3 refused.

Scaling: CX208LRE was coded into one of the following levels based on the above 3 items:

6. Happy and interested in life.
 7. Somewhat happy.
 8. Somewhat unhappy.
 9. Very unhappy.
 10. So unhappy that life is not worthwhile.
- If more than one item was missing, no score was computed and the variable was coded -2.

CX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

CX207SRE = 1.00 if CX207LRE = 1; CX207SRE = 0.91 if CX207LRE = 2;
CX207SRE = 0.73 if CX207LRE = 3; CX207SRE = 0.33 if CX207LRE = 4;
CX207SRE = 0.00 if CX207LRE = 5; CX207SRE = -2 if CX207LRE = -2

Reliability: INAP

Note: CX208LRE and CX208SRE are constructed variable based on questions x32, x33, and x34.

7. HUI3 Cognition Level/Cognition Score

CX209LRE/CX209RE: CX209SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: CX336RE (x38), CX337Re (x39)

During the past 4 weeks, how would you describe your ability to

CX336RE. “remember things?”

Coding: 1 remember most things; 2 somewhat forgetful; 3 very forgetful; 4 unable to remember anything; -1 don’t know; -3 refused.

CX337RE. “think and solve day to day problems?”

Coding: 1 clearly and solve problems; 2 a little difficulty; 3 some difficulty; 4 great deal of difficulty; 5 unable to think/solve problems; -1 don’t know; -3 refused.

Scaling: CX209LRE was coded into one of the following levels based on the above 2 items:

7. Able to remember most things, think clearly and solve day to day problems.
8. Able to remember most things, but have a little difficulty when trying to think and solve day to day problems.
9. Somewhat forgetful, but able to think clearly and solve day to day problems.
10. Somewhat forgetful, and have a little difficulty when trying to think or solve day to day problems.
11. Very forgetful, and have great difficulty when trying to think or solve day to day problems.
12. Unable to remember anything at all, and unable to think or solve day to day problems.

If more than one item was missing, no score was computed and the variable was coded -2.

CX209SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

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CX209SRE = 1.00 if CX209LRE = 1; CX209SRE = 0.86 if CX209LRE = 2;
CX209SRE = 0.92 if CX209LRE = 3; CX209SRE = 0.70 if CX209LRE = 4;
CX209SRE = 0.32 if CX209LRE = 5; CX209SRE = 0.00 if CX209LRE=6;
CX209SRE = -2 if CX209LRE = -2

Reliability: INAP

Note: CX209LRE and CX209SRE are constructed variable based on questions x38 and x39.

8. HUI3 Pain Level/Pain Score

CX210LRE/CX210RE: CX210SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: CX338RE (x40), CX339RE (x41)

During the past 4 weeks,

CX338RE. “have you had any trouble with pain or discomfort?”

Coding: 1 yes; 2 no; -3 refused.

CX339RE. “how many of your activities were limited by pain or discomfort?”

Coding: 1 none; 2 a few; 3 some; 4 most; 5 all; -1 don’t know; -2 inappropriate (if CX338RE=2); -3 refused.

Scaling: CX210LRE was coded into one of the following levels based on the above 2 items:

6. Free of pain and discomfort.
7. Mild to moderate pain that prevents no activities.
8. Moderate pain that prevents a few activities.
9. Moderate to severe pain that prevents some activities.
10. Severe pain that prevents most activities.

If more than one item was missing, no score was computed and the variable was coded -2.

CX210SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

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CX210SRE = 1.00 if CX210LRE = 1; CX210SRE = 0.92 if CX210LRE = 2;
CX210SRE = 0.77 if CX210LRE = 3; CX210SRE = 0.47 if CX210LRE = 4;
CX210SRE = 0.00 if CX210LRE = 5; CX210SRE = -2 if CX210LRE = -2

Reliability: INAP

Note: CX210LRE and CX210SRE are constructed variable based on questions x40 and x41.

Multi-Attribute Scale

Multi-attribute scales measure overall Health-Related Quality of Life (HRQL), with the score for dead = 0.00 and the score for perfect health = 1.00. Negative scores are possible and represent health states to be worse than dead. The lowest possible score for HUI3 is -0.36.

Health Utilities Index Mark 3 (HUI3) Summary Score

CX202ARE: continuous variable based on 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Component Dimension Levels/Scores: CX203LRE (x2, x3, x4, x5, x6), CX204LRE (x7, x8, x10, x11), CX205LRE (x12, x13, x14, x15, x16), CX206LRE (x17, x18, x19, x20, x21, x22, x23, x24), CX207LRE (x25, x26, x27, x28), CX208LRE (x32, x33, x34), CX209LRE (x38, x39), CX210LRE (x40, x41)

CX203LRE. Vision level
CX204LRE. Hearing level
CX205LRE. Speech level
CX206LRE. Ambulation level
CX207LRE. Dexterity level
CX208LRE. Emotion level
CX209LRE. Cognition level
CX210LRE. Pain level

Coding: see the coding scheme in previous section (Single-Attribute Scales).

Scaling: CX202ARE was constructed by first converting component dimension attribute levels to attribute utility scores based on the Multi-attribute Utility Function Table and then calculating the summary score using the formula for Dead-Perfect Health Scale (see <http://www.healthutilities.com/hui3.htm>):

$$u^* = 1.371 * (\text{Vision Score} * \text{Hearing Score} * \text{Speech Score} * \text{Ambulation Score} * \text{Dexterity Score} * \text{Emotion Score} * \text{Cognition Score} * \text{Pain Score}) - 0.371$$

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where

Vision Score = 1.00 if CX203LRE = 1; Vision Score = 0.98 if CX203LRE = 2;
Vision Score = 0.89 if CX203LRE = 3; Vision Score = 0.84 if CX203LRE = 4;
Vision Score = 0.75 if CX203LRE = 5; Vision Score = 0.61 if CX203LRE = 6;

Hearing Score = 1.00 if CX204LRE = 1; Hearing Score = 0.95 if CX204LFE = 2;
Hearing Score = 0.89 if CX204LRE = 3; Hearing Score = 0.80 if CX204LRE = 4;
Hearing Score = 0.74 if CX204LRE = 5; Hearing Score = 0.61 if CX204LRE = 6;

Speech Score = 1.00 if CX204LRE = 1; Speech Score = 0.94 if CX204LFE = 2;
Speech Score = 0.89 if CX204LRE = 3; Speech Score = 0.81 if CX204LRE = 4;
Speech Score = 0.68 if CX204LRE = 5;

Ambulation Score = 1.00 if CX204LRE = 1; Ambulation Score = 0.93 if CX204LFE = 2;
Ambulation Score = 0.86 if CX204LRE = 3; Ambulation Score = 0.73 if CX204LRE = 4;
Ambulation Score = 0.65 if CX204LRE = 5; Ambulation Score = 0.58 if CX204LRE = 6;

The score ranges from 0 to 1, representing dead to perfect health (negative scores are allowed with the lowest possible score of -0.36).

Reliability: α = INAPP

2003-2005 Graduate Spouse Respondent Telephone Interview

This is the first round of data collection for graduate spouses. No health items for graduate spouses are available prior to this. The Health Utility Index used by WLS is the self-assessed, 4-week health-status recall, US English version (HUI23S4US.40Q). The coding and scoring of responses for HUI3 can be found at <http://www.healthutilities.com/hui3.htm>.

Single-Attribute Scales

Single-attribute scales measure within-attribute morbidity, with a score of 0.00 representing the worst level and 1.00 the best.

1. HUI3 Vision Level/Vision Score

AX203LRE/AX203SRE: AX203SRE is a continuous variable constructed from the following 5 items.

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2003-2005 Graduate Spouse Respondent Telephone Interview

Items: 1993-4 Graduate Respondent Telephone Interview, Questions AX301RE (x2), AX302RE (x3), AX303RE (x4), AX304RE (x5), AX305RE (x6)

During the past 4 weeks, have you been able to see

AX301RE. “well enough to read ordinary newsprint without glasses or contact lenses?”

AX302RE. “well enough to read ordinary newsprint with glasses or contact lenses?”

AX303RE. “at all?”

AX304RE. “well enough to recognize a friend on the other side of the street without glasses or contact lenses?”

AX305RE. “well enough to recognize a friend on the other side of the street with glasses or contact lenses?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: AX301RE = 1 for AX302RE, AX301RE = 1 or AX302RE = 1 for AX303RE, AX303RE = 2 for AX304RE, AX304RE = 1 or AX303RE = 2 for AX305RE)

Scaling: AX203LRE was coded into one of the following levels based on the above 5 items:

13. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, without glasses or contact lenses.
14. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses.
15. Able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses.
16. Able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses.
17. Unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses.
18. Unable to see at all.

If more than one item was missing, no score was computed and the variable was coded -2.

AX203SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX203SRE = 1.00 if AX203LRE = 1; AX203SRE = 0.95 if AX203LRE = 2;
AX203SRE = 0.73 if AX203LRE = 3; AX203SRE = 0.59 if AX203LRE = 4;
AX203SRE = 0.38 if AX203LRE = 5; AX203SRE = 0.00 if AX203LRE = 6;
AX203SRE = -2 if AX203LRE = -2

Reliability: INAP

Note: AX203LRE and AX203SRE are constructed variables based on questions x2, x3, x4, x5, and x6.

2. HUI3 Hearing Level/Hearing Score

AX204LRE/AX204SRE: AX204SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions AX306RE (x7), AX307RE (x8), AX308RE (x10), AX309RE (x11)

During the past 4 weeks, have you been able to hear

AX306RE. “what is said in a group conversation with at least three other people, without a hearing aid?”

AX307RE. “what is said in a group conversation with at least three other people with a hearing aid?”

AX308RE. “what is said in a conversation with one other person in a quiet room without a hearing aid?”

AX309RE. “what is said in a conversation with one other person in a quiet room with a hearing aid?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: AX306RE = 1 for AX307RE and AX308RE, AX306RE = 1 or AX308RE = 1 for AX309RE)

Scaling: AX204LRE was coded into one of the following levels based on the above 4 items:

13. Able to hear what is said in a group conversation with at least three other people, without a hearing aid.
14. Able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but requires a hearing aid to hear what is said in a group conversation with at least three other people.
15. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, and able to hear what is said in a group conversation with at least three other people, with a hearing aid.
16. Able to hear what is said in a conversation with one other person in a quiet room, without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
17. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.

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18. Unable to hear at all.

If more than one item was missing, no score was computed and the variable was coded -2.

AX204SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX204SRE = 1.00 if AX204LRE = 1; AX204SRE = 0.86 if AX204LRE = 2;
AX204SRE = 0.71 if AX204LRE = 3; AX204SRE = 0.48 if AX204LRE = 4;
AX204SRE = 0.32 if AX204LRE = 5; AX204SRE = 0.00 if AX204LRE = 6;
AX204SRE = -2 if AX204LRE=-2

Reliability: INAP

Note: AX204LRE and AX204SRE are constructed variable based on questions x7, x8, x10, and x11.

3. HUI3 Speech Level/Speech Score

AX205LRE/AX205SRE: AX205SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions AX310RE (x12), AX311RE (x13), AX312RE (x14), AX313RE (x15), AX314RE (x16)

During the past 4 weeks,

AX310RE. “have people who do not know you understood you completely when you speak?”

AX311RE. “have people who do not know you understood you partially when you speak?”

AX312RE. “have people who know you well understood you completely when you speak?”

AX313RE. “have people who know you well understood you partially when you speak?”

AX314RE. “have you been able to speak at all?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: AX310RE = 1 for AX311RE and AX312RE, AX310RE = 1 or AX312RE = 1 for AX313RE, AX310RE = 1 or AX312RE = 1 or AX313RE = 1 for AX314RE)

Scaling: AX205LRE was coded into one of the following levels based on the above 5 items:

11. Able to be understood completely when speaking with strangers or friends

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12. Able to be understood partially when speaking with strangers but able to be understood completely when speaking with people who know me well.
13. Able to be understood partially when speaking with strangers or people who know me well.
14. Unable to be understood when speaking with strangers but able to be understood partially by people who know me well.
15. Unable to be understood when speaking to other people (or unable to speak at all).

If more than one item was missing, no score was computed and the variable was coded -2.

AX205SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX205SRE = 1.00 if AX205LRE = 1; AX205SRE = 0.82 if AX205LRE = 2;
AX205SRE = 0.67 if AX205LRE = 3; AX205SRE = 0.41 if AX205LRE = 4;
AX205SRE = 0.00 if AX205LRE = 5; AX205SRE = -2 if AX205LRE = -2

Reliability: INAP

Note: AX205LRE and AX205SRE are constructed variable based on questions x12, x13, x14, x15, and x16.

4. HUI3 Ambulation Level/Ambulation Score

AX206LRE/AX206SRE: AX206SRE is a continuous variable constructed from the following 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions AX315RE (x17), AX316RE (x18), AX317RE (x19), AX318RE (x20), AX319RE (x21), AX320RE (x22), AX321RE (x23), AX322RE (x24)

During the past 4 weeks,

AX315RE. “have you been able to bend, lift, jump and run without difficulty and without help or equipment of any kind?”

AX316RE. “have you been able to walk around the neighborhood without difficulty and without help or equipment of any kind?”

AX317RE. “have you been able to walk around the neighborhood with difficulty but without help or equipment of any kind?”

AX318RE. “have you been able to walk at all?”

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- AX319RE. “have you needed mechanical support, such as braces or a cane or crutches, to be able to walk around the neighborhood?”
AX320RE. “have you needed the help of another person to walk?”
AX321RE. “have you needed a wheelchair to get around the neighborhood?”
AX322RE. “have you needed the help of another person to get around in the wheelchair?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: AX315RE = 1 for AX316RE, AX315RE = 1 or AX316RE = 1 for AX317RE, AX315RE = 1 or AX316RE = 1 or AX317RE = 1 for AX318RE, AX321RE, and AX322RE, AX315RE = 1 or AX316RE = 1 or AX317RE = 1 or AX318RE = 1 for AX319RE and AX320RE;); -3 refused

Scaling: AX206LRE was coded into one of the following levels based on the above 8 items:

13. Able to walk around the neighbourhood without difficulty, and without walking equipment.
 14. Able to walk around the neighbourhood with difficulty; but does not require walking equipment or the help of another person.
 15. Able to walk around the neighbourhood with walking equipment, but without the help of another person.
 16. Able to walk only short distances with walking equipment, and requires a wheelchair to get around the neighbourhood.
 17. Unable to walk alone, even with walking equipment. Able to walk short distances with the help of another person, and requires a wheelchair to get around the neighbourhood.
 18. Cannot walk at all.
- If more than one item was missing, no score was computed and the variable was coded -2.

AX206SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX206SRE = 1.00 if AX206LRE = 1; AX206SRE = 0.73 if AX206LRE = 2;
AX206SRE = 0.67 if AX206LRE = 3; AX206SRE = 0.36 if AX206LRE = 4;
AX206SRE = 0.16 if AX206LRE = 5; AX206SRE = 0.00 if AX206LRE=6;
AX206SRE = -2 if AX206LRE = -2

Reliability: INAP

Note: AX206LRE and AX206SRE are constructed variable based on questions x17, x18, x19, x20, x21, x22, x23, and x24.

5. HUI3 Dexterity Level/Dexterity Score

AX207LRE/AX207RE: AX207SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: AX323RE (x25), AX324RE (x26), AX325RE (x27), AX326RE (x28)

During the past 4 weeks,

AX323RE. “have you had full use of both hands and 10 fingers?”

AX324RE. “have you needed the help of another person because of limitations in the use of your hands or fingers?”

AX325RE. “due to limitations in the use of your hands or fingers, have you needed the help of another person with some tasks, most tasks, or all tasks?”

AX326RE. “have you needed special equipment, for example, special tools to help with dressing or eating, because of limitations in the use of your hands or fingers?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: AX323RE = 1 for AX324RE and AX326RE, AX323RE = 1 or AX324RE=2 for AX325RE); -3 refused

Scaling: AX207LRE was coded into one of the following levels based on the above 4 items:

13. Full use of two hands and ten fingers.
 14. Limitations in the use of hands or fingers, but does not require special tools or help of another person.
 15. Limitations in the use of hands or fingers, is independent with use of special tools (does not require the help of another person).
 16. Limitations in the use of hands or fingers, requires the help of another person for some tasks (not independent even with use of special tools).
 17. Limitations in use of hands or fingers, requires the help of another person for most tasks (not independent even with use of special tools).
 18. Limitations in use of hands or fingers, requires the help of another person for all tasks (not independent even with use of special tools).
- If more than one item was missing, no score was computed and the variable was coded -2.

AX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX207SRE = 1.00 if AX207LRE = 1; AX207SRE = 0.88 if AX207LRE = 2;
AX207SRE = 0.73 if AX207LRE = 3; AX207SRE = 0.45 if AX207LRE = 4;

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AX207SRE = 0.20 if AX207LRE = 5; AX207SRE = 0.00 if AX207LRE=6;
AX207SRE = -2 if AX207LRE = -2

Reliability: INAP

Note: AX207LRE and AX207SRE are constructed variable based on questions x25, x26, x27, and x28.

6. HUI3 Emotion Level/Emotion Score

AX208LRE/AX208RE: AX208SRE is a continuous variable constructed from the following 3 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: AX330RE (x32), AX331RE (x33), AX332RE (x34)

During the past 4 weeks,

AX330RE. "have you been feeling happy or unhappy?"

Coding: 1 happy; 2 unhappy; -1 don't know; -3 refused.

AX331RE. "would you describe yourself as having felt happy and interested in life, or somewhat happy?"

Coding: 1 happy and interested; 2 somewhat happy; -1 don't know; -2 inappropriate (if AX330RE = 1); -3 refused

AX332RE. "would you describe yourself as having felt somewhat unhappy, very unhappy, or so unhappy that life is not worthwhile?"

Coding: 1 somewhat unhappy; 2 very unhappy; 3 so unhappy life not worthwhile; -1 don't know; -2 inappropriate (if AX331RE = 1 or 2); -3 refused.

Scaling: AX208LRE was coded into one of the following levels based on the above 3 items:

11. Happy and interested in life.
 12. Somewhat happy.
 13. Somewhat unhappy.
 14. Very unhappy.
 15. So unhappy that life is not worthwhile.
- If more than one item was missing, no score was computed and the variable was coded -2.

AX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX207SRE = 1.00 if AX207LRE = 1; AX207SRE = 0.91 if AX207LRE = 2;
AX207SRE = 0.73 if AX207LRE = 3; AX207SRE = 0.33 if AX207LRE = 4;
AX207SRE = 0.00 if AX207LRE = 5; AX207SRE = -2 if AX207LRE = -2

Reliability: INAP

Note: AX208LRE and AX208SRE are constructed variable based on questions x32, x33, and x34.

7. HUI3 Cognition Level/Cognition Score

AX209LRE/AX209RE: AX209SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: AX336RE (x38), AX337Re (x39)

During the past 4 weeks, how would you describe your ability to

AX336RE. “remember things?”

Coding: 1 remember most things; 2 somewhat forgetful; 3 very forgetful; 4 unable to remember anything; -1 don't know; -3 refused.

AX337RE. “think and solve day to day problems?”

Coding: 1 clearly and solve problems; 2 a little difficulty; 3 some difficulty; 4 great deal of difficulty; 5 unable to think/solve problems; -1 don't know; -3 refused.

Scaling: AX209LRE was coded into one of the following levels based on the above 2 items:

13. Able to remember most things, think clearly and solve day to day problems.
14. Able to remember most things, but have a little difficulty when trying to think and solve day to day problems.
15. Somewhat forgetful, but able to think clearly and solve day to day problems.
16. Somewhat forgetful, and have a little difficulty when trying to think or solve day to day problems.

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17. Very forgetful, and have great difficulty when trying to think or solve day to day problems.
 18. Unable to remember anything at all, and unable to think or solve day to day problems.
- If more than one item was missing, no score was computed and the variable was coded -2.

AX209SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX209SRE = 1.00 if AX209LRE = 1; AX209SRE = 0.86 if AX209LRE = 2;
AX209SRE = 0.92 if AX209LRE = 3; AX209SRE = 0.70 if AX209LRE = 4;
AX209SRE = 0.32 if AX209LRE = 5; AX209SRE = 0.00 if AX209LRE=6;
AX209SRE = -2 if AX209LRE = -2

Reliability: INAP

Note: AX209LRE and AX209SRE are constructed variable based on questions x38 and x39.

8. HUI3 Pain Level/Pain Score

AX210LRE/AX210RE: AX210SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: AX338RE (x40), AX339RE (x41)

During the past 4 weeks,

AX338RE. "have you had any trouble with pain or discomfort?"

Coding: 1 yes; 2 no; -3 refused.

AX339RE. "how many of your activities were limited by pain or discomfort?"

Coding: 1 none; 2 a few; 3 some; 4 most; 5 all; -1 don't know; -2 inappropriate (if AX338RE=2); -3 refused.

Scaling: AX210LRE was coded into one of the following levels based on the above 2 items:

11. Free of pain and discomfort.
12. Mild to moderate pain that prevents no activities.
13. Moderate pain that prevents a few activities.
14. Moderate to severe pain that prevents some activities.

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15. Severe pain that prevents most activities.
If more than one item was missing, no score was computed and the variable was coded -2.

AX210SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

AX210SRE = 1.00 if AX210LRE = 1; AX210SRE = 0.92 if AX210LRE = 2;
AX210SRE = 0.77 if AX210LRE = 3; AX210SRE = 0.47 if AX210LRE = 4;
AX210SRE = 0.00 if AX210LRE = 5; AX210SRE = -2 if AX210LRE = -2

Reliability: INAP

Note: AX210LRE and AX210SRE are constructed variable based on questions x40 and x41.

Multi-Attribute Scale

Multi-attribute scales measure overall Health-Related Quality of Life (HRQL), with the score for dead = 0.00 and the score for perfect health = 1.00. Negative scores are possible and represent health states to be worse than dead. The lowest possible score for HUI3 is -0.36.

Health Utilities Index Mark 3 (HUI3) Summary Score

AX202ARE: continuous variable based on 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Component Dimension Levels/Scores: AX203LRE (x2, x3, x4, x5, x6), AX204LRE (x7, x8, x10, x11), AX205LRE (x12, x13, x14, x15, x16), AX206LRE (x17, x18, x19, x20, x21, x22, x23, x24), AX207LRE (x25, x26, x27, x28), AX208LRE (x32, x33, x34), AX209LRE (x38, x39), AX210LRE (x40, x41)

AX203LRE. Vision level
AX204LRE. Hearing level
AX205LRE. Speech level
AX206LRE. Ambulation level
AX207LRE. Dexterity level
AX208LRE. Emotion level
AX209LRE. Cognition level
AX210LRE. Pain level

Coding: see the coding scheme in previous section (Single-Attribute Scales).

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Scaling: AX202ARE was constructed by first converting component dimension attribute levels to attribute utility scores based on the Multi-attribute Utility Function Table and then calculating the summary score using the formula for Dead-Perfect Health Scale (see <http://www.healthutilities.com/hui3.htm>):

$$u^* = 1.371 * (\text{Vision Score} * \text{Hearing Score} * \text{Speech Score} * \text{Ambulation Score} * \text{Dexterity Score} * \text{Emotion Score} * \text{Cognition Score} * \text{Pain Score}) - 0.371$$

where

Vision Score = 1.00 if AX203LRE = 1; Vision Score = 0.98 if AX203LRE = 2;
Vision Score = 0.89 if AX203LRE = 3; Vision Score = 0.84 if AX203LRE = 4;
Vision Score = 0.75 if AX203LRE = 5; Vision Score = 0.61 if AX203LRE = 6;

Hearing Score = 1.00 if AX204LRE = 1; Hearing Score = 0.95 if AX204LFE = 2;
Hearing Score = 0.89 if AX204LRE = 3; Hearing Score = 0.80 if AX204LRE = 4;
Hearing Score = 0.74 if AX204LRE = 5; Hearing Score = 0.61 if AX204LRE = 6;

Speech Score = 1.00 if AX204LRE = 1; Speech Score = 0.94 if AX204LFE = 2;
Speech Score = 0.89 if AX204LRE = 3; Speech Score = 0.81 if AX204LRE = 4;
Speech Score = 0.68 if AX204LRE = 5;

Ambulation Score = 1.00 if AX204LRE = 1; Ambulation Score = 0.93 if AX204LFE = 2;
Ambulation Score = 0.86 if AX204LRE = 3; Ambulation Score = 0.73 if AX204LRE = 4;
Ambulation Score = 0.65 if AX204LRE = 5; Ambulation Score = 0.58 if AX204LRE = 6;

The score ranges from 0 to 1, representing dead to perfect health (negative scores are allowed with the lowest possible score of -0.36).

Reliability: α = INAPP

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This is the first round of data collection for sibling spouses. No health items for sibling spouses are available prior to this. The Health Utility Index used by WLS is the self-assessed, 4-week health-status recall, US English version (HUI23S4US.40Q). The coding and scoring of responses for HUI3 can be found at <http://www.healthutilities.com/hui3.htm>.

Single-Attribute Scales

Single-attribute scales measure within-attribute morbidity, with a score of 0.00 representing the worst level and 1.00 the best.

1. HUI3 Vision Level/Vision Score

BX203LRE/BX203SRE: BX203SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions BX301RE (x2), BX302RE (x3), BX303RE (x4), BX304RE (x5), BX305RE (x6)

During the past 4 weeks, have you been able to see

BX301RE. “well enough to read ordinary newsprint without glasses or contact lenses?”

BX302RE. “well enough to read ordinary newsprint with glasses or contact lenses?”

BX303RE. “at all?”

BX304RE. “well enough to recognize a friend on the other side of the street without glasses or contact lenses?”

BX305RE. “well enough to recognize a friend on the other side of the street with glasses or contact lenses?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: BX301RE = 1 for BX302RE, BX301RE = 1 or BX302RE = 1 for BX303RE, BX303RE = 2 for BX304RE, BX304RE = 1 or BX303RE = 2 for BX305RE)

Scaling: BX203LRE was coded into one of the following levels based on the above 5 items:

19. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, without glasses or contact lenses.
20. Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses.
21. Able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses.
22. Able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses.
23. Unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses.
24. Unable to see at all.

If more than one item was missing, no score was computed and the variable was coded -2.

BX203SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX203SRE = 1.00 if BX203LRE = 1; BX203SRE = 0.95 if BX203LRE = 2;
BX203SRE = 0.73 if BX203LRE = 3; BX203SRE = 0.59 if BX203LRE = 4;
BX203SRE = 0.38 if BX203LRE = 5; BX203SRE = 0.00 if BX203LRE = 6;
BX203SRE = -2 if BX203LRE = -2

Reliability: INAP

Note: BX203LRE and BX203SRE are constructed variables based on questions x2, x3, x4, x5, and x6.

2. HUI3 Hearing Level/Hearing Score

BX204LRE/BX204SRE: BX204SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions BX306RE (x7), BX307RE (x8), BX308RE (x10), BX309RE (x11)

During the past 4 weeks, have you been able to hear

BX306RE. “what is said in a group conversation with at least three other people, without a hearing aid?”

BX307RE. “what is said in a group conversation with at least three other people with a hearing aid?”

BX308RE. “what is said in a conversation with one other person in a quiet room without a hearing aid?”

BX309RE. “what is said in a conversation with one other person in a quiet room with a hearing aid?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: BX306RE = 1 for BX307RE and BX308RE, BX306RE = 1 or BX308RE = 1 for BX309RE)

Scaling: BX204LRE was coded into one of the following levels based on the above 4 items:

19. Able to hear what is said in a group conversation with at least three other people, without a hearing aid.
20. Able to hear what is said in a conversation with one other person in a quiet room without a hearing aid, but requires a hearing aid to hear what is said in a group conversation with at least three other people.

21. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, and able to hear what is said in a group conversation with at least three other people, with a hearing aid.
 22. Able to hear what is said in a conversation with one other person in a quiet room, without a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
 23. Able to hear what is said in a conversation with one other person in a quiet room with a hearing aid, but unable to hear what is said in a group conversation with at least three other people even with a hearing aid.
 24. Unable to hear at all.
- If more than one item was missing, no score was computed and the variable was coded -2.

BX204SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX204SRE = 1.00 if BX204LRE = 1; BX204SRE = 0.86 if BX204LRE = 2;
BX204SRE = 0.71 if BX204LRE = 3; BX204SRE = 0.48 if BX204LRE = 4;
BX204SRE = 0.32 if BX204LRE = 5; BX204SRE = 0.00 if BX204LRE = 6;
BX204SRE = -2 if BX204LRE=-2

Reliability: INAP

Note: BX204LRE and BX204SRE are constructed variable based on questions x7, x8, x10, and x11.

3. HUI3 Speech Level/Speech Score

BX205LRE/BX205SRE: BX205SRE is a continuous variable constructed from the following 5 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions BX310RE (x12), BX311RE (x13), BX312RE (x14), BX313RE (x15), BX314RE (x16)

During the past 4 weeks,

BX310RE. “have people who do not know you understood you completely when you speak?”

BX311RE. “have people who do not know you understood you partially when you speak?”

BX312RE. “have people who know you well understood you completely when you speak?”

BX313RE. “have people who know you well understood you partially when you speak?”

BX314RE. “have you been able to speak at all?”

Coding: 1 yes; 2 no; -1 don’t know; -2 inappropriate (conditions differ by variables: BX310RE = 1 for BX311RE and BX312RE, BX310RE = 1 or BX312RE = 1 for BX313RE, BX310RE = 1 or BX312RE = 1 or BX313RE = 1 for BX314RE)

Scaling: BX205LRE was coded into one of the following levels based on the above 5 items:

16. Able to be understood completely when speaking with strangers or friends
17. Able to be understood partially when speaking with strangers but able to be understood completely when speaking with people who know me well.
18. Able to be understood partially when speaking with strangers or people who know me well.
19. Unable to be understood when speaking with strangers but able to be understood partially by people who know me well.
20. Unable to be understood when speaking to other people (or unable to speak at all).

If more than one item was missing, no score was computed and the variable was coded -2.

BX205SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX205SRE = 1.00 if BX205LRE = 1; BX205SRE = 0.82 if BX205LRE = 2;
BX205SRE = 0.67 if BX205LRE = 3; BX205SRE = 0.41 if BX205LRE = 4;
BX205SRE = 0.00 if BX205LRE = 5; BX205SRE = -2 if BX205LRE = -2

Reliability: INAP

Note: BX205LRE and BX205SRE are constructed variable based on questions x12, x13, x14, x15, and x16.

4. HUI3 Ambulation Level/Ambulation Score

BX206LRE/BX206SRE: BX206SRE is a continuous variable constructed from the following 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions BX315RE (x17), BX316RE (x18), BX317RE (x19), BX318RE (x20), BX319RE (x21), BX320RE (x22), BX321RE (x23), BX322RE (x24)

During the past 4 weeks,

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- BX315RE. “have you been able to bend, lift, jump and run without difficulty and without help or equipment of any kind?”
- BX316RE. “have you been able to walk around the neighborhood without difficulty and without help or equipment of any kind?”
- BX317RE. “have you been able to walk around the neighborhood with difficulty but without help or equipment of any kind?”
- BX318RE. “have you been able to walk at all?”
- BX319RE. “have you needed mechanical support, such as braces or a cane or crutches, to be able to walk around the neighborhood?”
- BX320RE. “have you needed the help of another person to walk?”
- BX321RE. “have you needed a wheelchair to get around the neighborhood?”
- BX322RE. “have you needed the help of another person to get around in the wheelchair?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: BX315RE = 1 for BX316RE, BX315RE = 1 or BX316RE = 1 for BX317RE, BX315RE = 1 or BX316RE = 1 or BX317RE = 1 for BX318RE, BX321RE, and BX322RE, BX315RE = 1 or BX316RE = 1 or BX317RE = 1 or BX318RE = 1 for BX319RE and BX320RE;); -3 refused

Scaling: BX206LRE was coded into one of the following levels based on the above 8 items:

19. Able to walk around the neighbourhood without difficulty, and without walking equipment.
 20. Able to walk around the neighbourhood with difficulty; but does not require walking equipment or the help of another person.
 21. Able to walk around the neighbourhood with walking equipment, but without the help of another person.
 22. Able to walk only short distances with walking equipment, and requires a wheelchair to get around the neighbourhood.
 23. Unable to walk alone, even with walking equipment. Able to walk short distances with the help of another person, and requires a wheelchair to get around the neighbourhood.
 24. Cannot walk at all.
- If more than one item was missing, no score was computed and the variable was coded -2.

BX206SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX206SRE = 1.00 if BX206LRE = 1; BX206SRE = 0.73 if BX206LRE = 2;
BX206SRE = 0.67 if BX206LRE = 3; BX206SRE = 0.36 if BX206LRE = 4;
BX206SRE = 0.16 if BX206LRE = 5; BX206SRE = 0.00 if BX206LRE=6;
BX206SRE = -2 if BX206LRE = -2

Reliability: INAP

Note: BX206LRE and BX206SRE are constructed variable based on questions x17, x18, x19, x20, x21, x22, x23, and x24.

5. HUI3 Dexterity Level/Dexterity Score

BX207LRE/BX207RE: BX207SRE is a continuous variable constructed from the following 4 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: BX323RE (x25), BX324RE (x26), BX325RE (x27), BX326RE (x28)

During the past 4 weeks,

BX323RE. “have you had full use of both hands and 10 fingers?”

BX324RE. “have you needed the help of another person because of limitations in the use of your hands or fingers?”

BX325RE. “due to limitations in the use of your hands or fingers, have you needed the help of another person with some tasks, most tasks, or all tasks?”

BX326RE. “have you needed special equipment, for example, special tools to help with dressing or eating, because of limitations in the use of your hands or fingers?”

Coding: 1 yes; 2 no; -1 don't know; -2 inappropriate (conditions differ by variables: BX323RE = 1 for BX324RE and BX326RE, BX323RE = 1 or BX324RE=2 for BX325RE); -3 refused

Scaling: BX207LRE was coded into one of the following levels based on the above 4 items:

19. Full use of two hands and ten fingers.
 20. Limitations in the use of hands or fingers, but does not require special tools or help of another person.
 21. Limitations in the use of hands or fingers, is independent with use of special tools (does not require the help of another person).
 22. Limitations in the use of hands or fingers, requires the help of another person for some tasks (not independent even with use of special tools).
 23. Limitations in use of hands or fingers, requires the help of another person for most tasks (not independent even with use of special tools).
 24. Limitations in use of hands or fingers, requires the help of another person for all tasks (not independent even with use of special tools).
- If more than one item was missing, no score was computed and the variable was coded -2.

BX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX207SRE = 1.00 if BX207LRE = 1; BX207SRE = 0.88 if BX207LRE = 2;
BX207SRE = 0.73 if BX207LRE = 3; BX207SRE = 0.45 if BX207LRE = 4;
BX207SRE = 0.20 if BX207LRE = 5; BX207SRE = 0.00 if BX207LRE=6;
BX207SRE = -2 if BX207LRE = -2

Reliability: INAP

Note: BX207LRE and BX207SRE are constructed variable based on questions x25, x26, x27, and x28.

6. HUI3 Emotion Level/Emotion Score

BX208LRE/BX208RE: BX208SRE is a continuous variable constructed from the following 3 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: BX330RE (x32), BX331RE (x33), BX332RE (x34)

During the past 4 weeks,

BX330RE. “have you been feeling happy or unhappy?”

Coding: 1 happy; 2 unhappy; -1 don’t know; -3 refused.

BX331RE. “would you describe yourself as having felt happy and interested in life, or somewhat happy?”

Coding: 1 happy and interested; 2 somewhat happy; -1 don’t know; -2 inappropriate (if BX330RE = 1); -3 refused

BX332RE. “would you describe yourself as having felt somewhat unhappy, very unhappy, or so unhappy that life is not worthwhile?”

Coding: 1 somewhat unhappy; 2 very unhappy; 3 so unhappy life not worthwhile; -1 don’t know; -2 inappropriate (if BX331RE = 1 or 2); -3 refused.

Scaling: BX208LRE was coded into one of the following levels based on the above 3 items:

16. Happy and interested in life.

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17. Somewhat happy.
 18. Somewhat unhappy.
 19. Very unhappy.
 20. So unhappy that life is not worthwhile.
- If more than one item was missing, no score was computed and the variable was coded -2.

BX207SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX207SRE = 1.00 if BX207LRE = 1; BX207SRE = 0.91 if BX207LRE = 2;
BX207SRE = 0.73 if BX207LRE = 3; BX207SRE = 0.33 if BX207LRE = 4;
BX207SRE = 0.00 if BX207LRE = 5; BX207SRE = -2 if BX207LRE = -2

Reliability: INAP

Note: BX208LRE and BX208SRE are constructed variable based on questions x32, x33, and x34.

7. HUI3 Cognition Level/Cognition Score

BX209LRE/BX209RE: BX209SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: BX336RE (x38), BX337Re (x39)

During the past 4 weeks, how would you describe your ability to

BX336RE. “remember things?”

Coding: 1 remember most things; 2 somewhat forgetful; 3 very forgetful; 4 unable to remember anything; -1 don’t know; -3 refused.

BX337RE. “think and solve day to day problems?”

Coding: 1 clearly and solve problems; 2 a little difficulty; 3 some difficulty; 4 great deal of difficulty; 5 unable to think/solve problems; -1 don’t know; -3 refused.

Scaling: BX209LRE was coded into one of the following levels based on the above 2 items:

19. Able to remember most things, think clearly and solve day to day problems.

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20. Able to remember most things, but have a little difficulty when trying to think and solve day to day problems.
21. Somewhat forgetful, but able to think clearly and solve day to day problems.
22. Somewhat forgetful, and have a little difficulty when trying to think or solve day to day problems.
23. Very forgetful, and have great difficulty when trying to think or solve day to day problems.
24. Unable to remember anything at all, and unable to think or solve day to day problems.

If more than one item was missing, no score was computed and the variable was coded -2.

BX209SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX209SRE = 1.00 if BX209LRE = 1; BX209SRE = 0.86 if BX209LRE = 2;
BX209SRE = 0.92 if BX209LRE = 3; BX209SRE = 0.70 if BX209LRE = 4;
BX209SRE = 0.32 if BX209LRE = 5; BX209SRE = 0.00 if BX209LRE=6;
BX209SRE = -2 if BX209LRE = -2

Reliability: INAP

Note: BX209LRE and BX209SRE are constructed variable based on questions x38 and x39.

8. HUI3 Pain Level/Pain Score

BX210LRE/BX210RE: BX210SRE is a continuous variable constructed from the following 2 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Questions: BX338RE (x40), BX339RE (x41)

During the past 4 weeks,

BX338RE. “have you had any trouble with pain or discomfort?”

Coding: 1 yes; 2 no; -3 refused.

BX339RE. “how many of your activities were limited by pain or discomfort?”

Coding: 1 none; 2 a few; 3 some; 4 most; 5 all; -1 don't know; -2 inappropriate (if BX338RE=2); -3 refused.

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Scaling: BX210LRE was coded into one of the following levels based on the above 2 items:

16. Free of pain and discomfort.
17. Mild to moderate pain that prevents no activities.
18. Moderate pain that prevents a few activities.
19. Moderate to severe pain that prevents some activities.
20. Severe pain that prevents most activities.

If more than one item was missing, no score was computed and the variable was coded -2.

BX210SRE was constructed by converting the level to a score based on the HUI3 Single-Attribute Utility Function on Dead-Healthy Scale (see the look-up table at <http://www.healthutilities.com/hui3.htm>):

BX210SRE = 1.00 if BX210LRE = 1; BX210SRE = 0.92 if BX210LRE = 2;
BX210SRE = 0.77 if BX210LRE = 3; BX210SRE = 0.47 if BX210LRE = 4;
BX210SRE = 0.00 if BX210LRE = 5; BX210SRE = -2 if BX210LRE = -2

Reliability: INAP

Note: BX210LRE and BX210SRE are constructed variable based on questions x40 and x41.

Multi-Attribute Scale

Multi-attribute scales measure overall Health-Related Quality of Life (HRQL), with the score for dead = 0.00 and the score for perfect health = 1.00. Negative scores are possible and represent health states to be worse than dead. The lowest possible score for HUI3 is -0.36.

Health Utilities Index Mark 3 (HUI3) Summary Score

BX202ARE: continuous variable based on 8 items.

Items: 1993-4 Graduate Respondent Telephone Interview, Component Dimension Levels/Scores: BX203LRE (x2, x3, x4, x5, x6), BX204LRE (x7, x8, x10, x11), BX205LRE (x12, x13, x14, x15, x16), BX206LRE (x17, x18, x19, x20, x21, x22, x23, x24), BX207LRE (x25, x26, x27, x28), BX208LRE (x32, x33, x34), BX209LRE (x38, x39), BX210LRE (x40, x41)

- BX203LRE. Vision level
- BX204LRE. Hearing level
- BX205LRE. Speech level
- BX206LRE. Ambulation level
- BX207LRE. Dexterity level

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BX208LRE. Emotion level
BX209LRE. Cognition level
BX210LRE. Pain level

Coding: see the coding scheme in previous section (Single-Attribute Scales).

Scaling: BX202ARE was constructed by first converting component dimension attribute levels to attribute utility scores based on the Multi-attribute Utility Function Table and then calculating the summary score using the formula for Dead-Perfect Health Scale (see <http://www.healthutilities.com/hui3.htm>):

$$u^* = 1.371 * (\text{Vision Score} * \text{Hearing Score} * \text{Speech Score} * \text{Ambulation Score} * \text{Dexterity Score} * \text{Emotion Score} * \text{Cognition Score} * \text{Pain Score}) - 0.371$$

where

Vision Score = 1.00 if BX203LRE = 1; Vision Score = 0.98 if BX203LRE = 2;
Vision Score = 0.89 if BX203LRE = 3; Vision Score = 0.84 if BX203LRE = 4;
Vision Score = 0.75 if BX203LRE = 5; Vision Score = 0.61 if BX203LRE = 6;

Hearing Score = 1.00 if BX204LRE = 1; Hearing Score = 0.95 if BX204LFE = 2;
Hearing Score = 0.89 if BX204LRE = 3; Hearing Score = 0.80 if BX204LRE = 4;
Hearing Score = 0.74 if BX204LRE = 5; Hearing Score = 0.61 if BX204LRE = 6;

Speech Score = 1.00 if BX204LRE = 1; Speech Score = 0.94 if BX204LFE = 2;
Speech Score = 0.89 if BX204LRE = 3; Speech Score = 0.81 if BX204LRE = 4;
Speech Score = 0.68 if BX204LRE = 5;

Ambulation Score = 1.00 if BX204LRE = 1; Ambulation Score = 0.93 if BX204LFE = 2;
Ambulation Score = 0.86 if BX204LRE = 3; Ambulation Score = 0.73 if BX204LRE = 4;
Ambulation Score = 0.65 if BX204LRE = 5; Ambulation Score = 0.58 if BX204LRE = 6;

The score ranges from 0 to 1, representing dead to perfect health (negative scores are allowed with the lowest possible score of -0.36).

Reliability: α = INAPP

Source

Feeny, D., Furlong, W., Boyle, M., & Torrance, G. W. (1995). Multi-Attribute Health Status Classification Systems: Health Utilities Index. *PharmacoEconomics* 7 (6), 490-502.

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Feeny, D. H., Torrance, G. W., & Furlong, W. J. (1996). Health Utilities index. In B. Spilker (Ed.), *Quality of Life and Pharmacoeconomics in Clinical Trials* (pp. 239-252). Second Edition. Philadelphia: Lippincott-Raven Press.

Furlong, W., Feeny, D., Torrance, G. W., Coldsmith, C., DePauw, S., Boyle, M., Denton, M., & Zhu, Z. (1998). Multiplicative Multi-Attribute Utility Function for the Health Utilities Index Mark 3 (HUI3) System: A Technical Report. McMaster University Centre for Health Economics and Policy analysis Working Paper No. 98-11.

Selected Studies Using Health Utilities Index Mark 3

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