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Measures of Stress in the Health and Retirement Study (HRS) and the HRS Family of Studies

USER GUIDE

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AUTHOR NOTE

This guide is meant to be used in conjunction with data available at G2aging.org and the data codebooks that are unique to each study. Please visit stresscenter.ucsf.edu for the latest version. If you find any errors in this guide please contact Alexandra.Crosswell@ucsf.edu. Please cite this document as: Gruenewald TL, Crosswell AD, Epel ES, Mayer S, Smith J, Lee J. (2020). Measures of stress in the Health and Retirement Study and the HRS Family of Studies: User Guide.

ABSTRACT

This guidebook summarizes and compares measures of stress in the Health and Retirement Study (HRS) and eight of its sister surveys from other countries: Mexico Health and Aging Study (MHAS), the English Longitudinal Study of Aging (ELSA), the Survey of Health, Ageing, and Retirement in Europe (SHARE), the Korean Longitudinal Study of Aging (KLoSA), the Japanese Study on Aging and Retirement (JSTAR), the Chinese Health and Retirement Longitudinal Study (CHARLS), the Costa Rican Longevity and Healthy Aging Study (CRELES), and The Irish Longitudinal Study on Aging (TILDA). This guidebook provides an overview of available measures of stress in the HRS family of studies in seven domains: (1) stressful life events and traumas, (2) chronic strains, (3) job strain, (4) discrimination experience, (5) social strain and unsupportive relationships, (6) loneliness, and (7) environmental or neighborhood disorder and lack of cohesion. The characteristics of extant measures within each study are reviewed to facilitate a comparison of methodological variations in assessment which may bear on the ability to conduct cross-study analyses.

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II. INTRODUCTION

The Health and Retirement Study (HRS) has long been a key source of information regarding the demographic, economic, behavioral and health characteristics of adults age 50 and over in the United States. Efforts to create similar data sources in other countries led to the creation of the HRS family of studies, including the English Longitudinal Study of Ageing (ELSA), the Survey of Health, Ageing, and Retirement in Europe (SHARE), the Mexican Health and Aging Study (MHAS), the Costa Rican Longevity and Healthy Aging Study (CRELES), the Korean Longitudinal Study of Aging (KLoSA), the Japanese Study of Aging and Retirement (JSTAR), the Irish Longitudinal Study of Ageing (TILDA), and the Chinese Health and Retirement Longitudinal Study (CHARLS). An overview of this family of surveys, including a description of the design of each study and key domains of measurement is available in Lee (2010).[1] Table II.1 provides an outline of the assessment waves and year(s) each wave was fielded for each study.

The design and content of each study is unique, though the ability to perform cross-study comparisons via similarities in measure domains and instruments did guide the selection of measures in each study within the HRS family of studies. However, identifying the measures for a given conceptual domain both within and across studies represents a challenging task that often inhibits cross-study comparisons. Additionally, there are characteristics of the measures such as variation in the item wording that need to be identified before cross-study comparison can take place. In an effort to facilitate such comparisons, a series of domain-specific user guides (e.g. cognition, work, demographics) have been developed that provide information about the constructs and measurements of each construct available in each study. These guides include information on what measures are present in each study at what wave, the comparability of measures of specific constructs across studies, as well as recommendations for the construction of harmonized measures to support cross-study comparisons.

The current guide provides an overview of measures of psychological, social, and environmental stress in the HRS family of studies. The impetus for the development of this guidebook originates in a Stress Measurement Working Group funded by the National Institute on Aging (NIA/NIH R24 AG048024). A core objective of the Stress Measurement Working Group was to capitalize on the availability of stress measures in national investigations of health and aging to promote empirical and theoretical advancement in stress science. The ongoing addition of measures to the HRS family of studies which capture elements of psychosocial and environmental stress exposure and experience provide a unique opportunity to not only advance the scientific study of stress within nations, but also to promote cross-national comparisons of stress experience and its possible relation to health and well-being in older adulthood.

In 2015, Drs. Elissa Epel and Wendy Mendes partnered with Dr. Lis Nielsen of the NIA to form the Stress Measurement Network. The goal of the Stress Network is to promote better theory and measurement of psychosocial stress in population-based studies. One of the specific aims is to facilitate the use of stress measures in population based studies by creating a user guide to harmonize across existing studies. This harmonization goal was led by Drs. Tara Gruenewald and Jinkook Lee, who had experience working with the HRS family of studies, and resulted in the guide presented here, along with the data available on the g2aging.org website.

In the development of this guide, the NIA Stress Measurement Network leadership first identified seven domains of stressful experiences that are linked to health-related outcomes. This domain list was the starting point for identifying measures within the HRS family of studies that assessed exposure to discrete events often characterized as stressors or traumas (e.g., loss of a family member to death, exposure to a natural disaster, victimization), as well as self-report of experiences and conditions typically characterized as eliciting distress and/or a physiological stress response in the stress literature. The latter measures included assessments of the experience of chronic burden or stress in various life domains (e.g., work, family, finances,

health), job-related stress, perceived discrimination and being the target of discriminatory actions, the presence of strain in social relationships, experiencing loneliness, and living in physical environments perceived as chaotic, unsafe, and lacking in social cohesion. This guide is structured to first provide a description of the specific measures in each of these domains available in each study. A direct comparison of measure items across studies then follows to facilitate an understanding of the comparability of measures of each stress domain across the investigations. Recommendations for harmonized measures to utilize in cross-study comparisons are also provided.

Table II.1. HRS Family of Studies and Study Collection Waves

	HRS	MHAS	ELSA	SHARE	CRELES	KLoSA	JSTAR	TILDA	CHARLS
1992-93	HRS W1 AHEAD 1993 W1								
1994-95	HRS W2 AHEAD 1995 W2								
1996-97	HRS W3								
1998-99	HRS W4								
2000-01	HRS W5	MHAS W1							
2002-03	HRS W6	MHAS W2	ELSA W1						
2004-05	HRS W7		ELSA W2	SHARE W1	CRELESW1				
2006-07	HRS W8		ELSA W3	SHARE W2	CRELESW2	KLoSA W1	JSTAR W1		
2008-09	HRS W9		ELSA W4		CRELES W3	KLoSA W2	JSTAR W2		
2010-11	HRS W10		ELSA W5	SHARE W4	CRELESW4	KLoSA W3	JSTAR W3	TILDA W1	CHARLS W1
2012-13	HRS W11	MHAS W3	ELSA W6	SHARE W5	CRELESW5	KLoSA W4	JSTAR W4	TILDA W2	CHARLS W2
2014-15	HRS W12								

[1]Lee, J. (2010). Data for pension and health: Data collection and sharing for policy design. *International Social Security Review, 63*(3-4), 197-222.

III. EXECUTIVE SUMMARY AND OVERVIEW

This guide provides an overview of measures of stress (exposures and perceptions) available in the HRS family of surveys around the world. In defining the characteristics of measures for inclusion in this guide, the NIA Stress Measurement Network defined a measure of stress as a measure which captured exposure to events often characterized as negative, stressful, or traumatic, as well as self-reported conditions, experiences, and perceptions hypothesized to elicit a stress perception and/or response in dominant stress models and theories, including perceptions of a lack of control, of demands outweighing coping resources, of role overload, of time pressure, or of threat to the social or physical well-being of the self or an important other. Stressful events included experiences such as a loss of a family member to death, being a victim of a crime, and experiencing a natural disaster. Self-reported stressful conditions included the ongoing experience of chronic burden, stress or strain in various life domains, job strain, discrimination experience, strain in social relationships, the experience of loneliness, and living in unsafe and chaotic environments that lack social cohesion. This guide excludes cognitive-affective and physiological measures of distress, such as negative emotions, depression, anxiety, and physiological activity that may represent responses to stressor exposure or perception. We acknowledge that conceptual and measurement challenges limit a clear delineation between the assessment of a stressor and a stress response. Nonetheless, measures selected for inclusion in this guide were those which best captured assessment of the experience of stressor events or perception of stressor conditions in various life domains. It is hoped that identification of such measures will facilitate examination of the association of stressor conditions with cognitive-affective and physiological distress experience and poor psychological and physical health states hypothesized to follow from stressor exposure.

Nine studies (HRS, ELSA, SHARE, TILDA, JSTAR, KLoSA, CHARLS, MHAS, CRELES) within the HRS family of studies were chosen by the Principal Investigators, and within those studies, seven stress domains were identified. These seven domains are:

1) Stressful life events and traumas
2) Chronic burdens/strains
3) Job strain/stress
4) Discrimination experience
5) Social strain and unsupportive relationships
6) Loneliness
7) Environmental/neighborhood disorder and lack of cohesion

An overview of the stress domain(s) assessed with one or more measures in each study is provided in Table III.1.

Table III.1. Domains of Stress Assessed in each Study

STRESS DOMAIN:	HRS	ELSA	SHARE	TILDA	JSTAR	KLoSA	CHARLS	MHAS	CRELES
Stressful life events and traumas	X+	X+	X*+	X+	X*+	X*+	X*+	X*+	X*+
Chronic strains	X	X		X*					X
Job strain/stress	X+	X+	X+		X+	X			
Discrimination	X+	X+		X*					
Social strain and unsupportive relationships	X+	X+	X	X+	X			X	X*
Loneliness	X+	X+	X+	X+	X*	X*	X*	X*	X*
Environmental/neighborhood disorder and lack of cohesion	X+	X+	X+		X				

*limited measurement of construct
+harmonized variable is available (at least one item is comparable across studies)

Below we briefly review measures for each domain of stress in each study, and describe what is possible for cross-study comparisons within each stress domain.

Stressful life events and traumas. All studies collected information on at least one discrete event that can be categorized as major life stressors or traumatic events (e.g. death of a family member, loss of a job), though only HRS, ELSA, and TILDA captured more than a handful of event exposures. HRS, ELSA, and TILDA ask about the lifetime occurrence of negative life events and traumas through event checklists. This included a subset of items that assessed experiences in childhood. See Sections IV.1 and V.1 for details. Summary counts of lifetime and childhood stressor experiences have been created for studies with event inventories. These summary count inventories cannot be directly compared given the varied events in each index across the different studies. However, each study did capture death of a child and thus that single item can be compared across studies.

Chronic burdens/strains. HRS included an assessment of the experience of ongoing burdens or strains and the degree of upset experienced in relation to each for eight life domains (health, health of spouse or child, drug/alcohol problem in family member, work, finances, housing, close relationships, and caregiving). CRELES included an assessment of whether stress or anxiety was experienced in relation to five life domains (health, health of parents or other relatives, work, finances, and family relationships). Other studies included assessments of strain within single domains, such as in financial or caregiving domains (see Sections IV.2 and V.2 for details). HRS and CRELES measures share three domains in common (health, work, and finances) and thus cross-study comparisons are possible.

Job strain/stress. HRS, ELSA, SHARE, JSTAR, TILDA, and KLoSA) included multi-item measures of job strain/stress derived from the Karasek demand-control measure of job strain. CRELES also includes a measure of discrimination experienced in the workplace. Descriptions of each measure are provided in Section IV.3. The multi-item measures included in HRS, ELSA, SHARE, JSTAR, and KLoSA varied in length from 6 to 15 total items and minor to moderate variation in the wording of items occurred in SHARE, JSTAR, and KLoSA. A summary score utilizing the six items that were included in HRS, SHARE, ELSA, and JSTAR (KLoSA only had four of the items so was not included) was created, allowing for cross-study comparison.

Discrimination experience. HRS and ELSA included measures of the frequency of discrimination experience in everyday life. HRS also included lifetime experience of discriminatory events (e.g., being unfairly denied a promotion or dismissed from a job, being unfairly denied a loan, being harassed or abused by police). TILDA assessed the occurrence of discrimination at work. Respondents were also asked to indicate the identities (e.g., age, sex, race/ethnicity, religion, sexual orientation) upon which they believe everyday discrimination (HRS, ELSA) or workplace discrimination (TILDA) were based. Descriptions of the measures in each study are available in Sections IV.4 and V.4. The HRS and ELSA measures of everyday discrimination are comparable. The studies share five items across their assessments.

Social strain and unsupportive relationships. HRS, ELSA, TILDA, JSTAR, SHARE, MHAS, and CRELES all include multi-item measures of social strain and relationship support quality. Common indicators of social strain include assessments of social relationship targets as critical, irritating, and unreliable. Assessments of emotional support availability, reliable alliance, and validation support appear in measures of support quality across multiple studies. HRS, ELSA, and TILDA have six items in common that allow for comparison. Details are provided in in Sections IV.5 and V.5.

Loneliness. All studies included at least item that captures loneliness. HRS, ELSA, SHARE and TILDA included multi-item measures of loneliness. As described in Sections IV.6 and V.6, multi-item measures ranged from 3 to 11 items depending on the study and wave of measurement. Three and four-item aggregates that exhibit good internal reliability (Cronbach's alphas range from .75 to .83) are available for most waves of all four studies for cross-study comparison..

Environmental/neighborhood disorder and lack of cohesion. As described in Sections IV.7 and V.7, four studies include measures of environmental/neighborhood disorder, chaos, danger, and/or lack of cohesion. HRS, ELSA, and SHARE included multi-item measures that shared some items in each battery. The four items in SHARE's battery are also included in the HRS and ELSA measures. A four-item aggregate demonstrates moderate internal consistency across the three studies (Cronbach's alphas range from .60 to .84). HRS and ELSA also share seven items of their 8- and 9-item measures, respectively. Internal reliability estimates are more favorable for these larger aggregates (Cronbach's alphas range from .70 to .91). Subscales of neighborhood disorder and neighborhood cohesion are typically calculated for these measures. Two-item subscales can be constructed across all three studies although internal reliability coefficients are typically in the poor to moderate range (Cronbach's alphas range from .50 to .76); internal reliability coefficients are generally more favorable when constructing subscales from the larger set of items available in HRS and ELSA. JSTAR includes ten questions on the availability of resources (e.g., pharmacy and medical facilities are nearby), conditions (e.g., pollution or noise problems), and perceptions of neighbors (e.g., they can be trusted) that respondents indicate a yes or no response to. The measure in JSTAR is not directly comparable to those in HRS, ELSA, and SHARE.

More detailed descriptions of available measures and cross-study item comparability are provided in Sections IV – V of this guide. Recommendations for cross-study comparison should not supplant individual investigator judgement nor methodological needs unique to each study. Interested users should consult the Gateway to Global Aging Data website (https://g2aging.org/) for available guidebooks for other constructs which may be examined as antecedents, consequences, or correlates of stress experience, as well as an electronic repository with search capabilities for all measures assessed in the HRS family of studies.

IV. INVENTORY OF MEASURES

Section IV provides descriptions of each measure available in each study for the seven targeted stress domains:

1) Stressful life events and traumas
2) Chronic strains
3) Job strain/stress
4) Discrimination experience
5) Social strain and unsupportive relationships
6) Loneliness
7) Environmental/neighborhood disorder and lack of cohesion

The pages that follow detail the specific measurement of each domain in each study. These descriptions are followed by item-specific comparisons across studies for each domain.

IV.1 Stressful Life Events and Traumas

A long history of stress research has examined the psychosocial, behavioral and physical well-being correlates of major life events characterized as stressful, threatening or negative (e.g., Brown & Harris, 1989; Holmes & Rahe, 1967; see Cohen, Kessler, & Underwood, 1997; Shields & Slavich, 2017, for reviews). The HRS family of studies includes assessment of stressful life events through event inventories as well through measurement of events that are part of other assessment domains (e.g., family characteristics, finance-related events). HRS, ELSA and TILDA include brief life event and trauma inventories which assess the lifetime and childhood/adolescent experience of a number of events typically examined in the stress literature (e.g., death of a family member, victim of an assault, physical abuse in childhood). Other studies query the occurrence of a smaller number of negative life events or traumas. Because the list of events differs across the studies, we were not able to harmonize the measures or create summary scores that are consistent across studies. The only overlapping item in this domain across all studies is death of a child.

Measure Source:

The HRS lifetime events were taken from a longitudinal investigation of trauma by Krause and colleagues:

Krause, N., Shaw, B. A., & Cairney, J. (2004). A descriptive epidemiology of lifetime trauma and the physical health status of older adults. *Psychology and Aging, 19*(4), 637-648.

Sources for the measurement of life events and traumas:

Brown, G. W., & Harris, T. O. (1989). *Life events and illness*. New York: Guilford Press.

Cohen, S., Kessler, R.C., & Underwood, L. (1997). *Measuring Stress: A Guide for Health and Social Scientists*. Oxford University Press.

Holmes, T. H., & Rahe, R. H. (1967). Social Readjustment Rating Scale. *Journal of Psychosomatic Research, 11*(2), 213-218.

Shields, G. S., & Slavich, G. M. (2017). Lifetime stress exposure and health: A review of contemporary assessment methods and biological mechanisms. *Social and Personality Psychology Compass, 11*(8), 17.

Representative Publications:

Elliot, A. J., Mooney, C. J., Infurna, F. J., & Chapman, B. P. (2017). Associations of Lifetime Trauma and Chronic Stress With C-reactive Protein in Adults Ages 50 Years and Older: Examining the Moderating Role of Perceived Control. *Psychosomatic Medicine, 79*(6), 622-630.

Table IV.1. Assessment of Stressful Life Events and Traumas in the HRS Family of Studies and Variables Created for Cross-Country Comparison

STUDY	Assessment of Life Events and Traumas
HRS Available waves: 1 - 1992 to	HRS assesses the lifetime occurrence of seven major stressful life events/ traumas: • major earthquake, fire, flood, natural disaster (2006 - 2012) • combat experience (2006 - 2012) • victim of attack/assault (2004 – 2012)

6 - 2002 7 - 2004 8 - 2006 9 - 2008 10 - 2010 11 - 2012 12 - 2014	• life-threatening illness or accident (2004 – 2012) • death of a child (2004 - 2012) • life-threatening illness or accident of a spouse or child (2004 – 2012) • spouse, partner, or child addicted to drugs or alcohol (2006 – 2012) These events are taken from a measure developed by Krause and colleagues (2004). Participants are asked to indicate the occurrence of each event (yes/no) and the **year of the most recent occurrence (because of this, we are not able to calculate the number of events that occurred in childhood)**. A panel variable summary count of number of stressful life events was computed as the sum of the number of stressful life events that happened across the lifespan, using data from the participants most recent survey wave. Four of these items become available in Wave 7 and the rest in Wave 8. The respondent's most recent report for each item is used in the panel variable summary count. Wave-specific summary scores were not created though could be by the user as the individual item data is available. Note that there were several items that were not included in 2004 (combat experience and natural disaster) and thus the wave-specific summary score for that wave is not directly comparable to other waves. Respondents are also asked whether or not (yes/no) 4 events/experiences in childhood/ adolescence (before the age of 18). These items were asked in 2006, 2008, 2010, and 2012: • repeated a year of school • having trouble with the police (not asked in 2006) • a drug or alcohol problem of a parent that caused problems in the family • being physically abused by a parent A childhood life events summary was created by summing three of the items above (the first item was determined to not be severe enough to count as a 'stressful event'). This summary count is a panel variable using data from the **first** time the participant responses to each item. Note: Respondents in wave 3 were also asked whether they missed a month or more of school before age 16 because of a health condition though this item is not included in a count since it may indicate long term health problems and thus be confounded with health outcomes. In the Life History Questionnaire, respondents were also asked about three other adverse childhood experiences: • Difficult living arrangement before age 16 (e.g. ever lived with a foster family or orphanage). • Parents separated or divorced before age 16. • Parental death before age 16.

Since these items were captured at a different time point, and asked about experiences before age 16 (not 18), a separate summary score was created for them that we refer to as the 'life history childhood stress item summary score'. The summary count is the count of the three items, and is a panel variable.

Starting in wave 9, there were also several items that capture maternal warmth before age 18:
1. How much time and attention did their mothers give them when they needed it.
2. How much effort did their mother put into watching them and making sure they had a good upbringing.
3. How much the respondent agrees that they had a good relationship with their mothers.

Response scale options for items 1 & 2: (1) A lot, (2) Some, (3) A little, (4) None

Response scale option for item 3: (1) Strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, (5) strongly agree.

A panel variable was also created by taking the *first* time participants completed this questionnaire. Because the response scale was different for item #3, for the summary score, we gave those who indicated a neutral response (3) a score of 2.5 and fit the rest on a four-point scale where 1 became 4, 2 became 3, 3 became 2.5, 4 became 2 and 5 became 1. These items are also available as individual items at each wave.

Participants were also asked to report on their self-reported health while they were growing up before age 16 from excellent (1) to poor (5) though this is not considered a stressful life event or trauma and thus not included in summary scores.

Similarly, the respondent was asked about the family financial situation while they were growing up before age 16. Response options were: pretty well off (1), about average (2), and poor (3). This is not considered a stressful life event or trauma and thus not included in summary scores.

HRS also queries the experience of six stressful life events occurring in the past 5 years (2006, 2008, 2010, 2012):
- an involuntary job loss
- being unemployed and looking for work for at least 3 months
- unemployment of another member of the household
- moving to a worse residence or neighborhood
- being robbed or having one's home burglarized
- being a victim of fraud

Respondents indicate the occurrence (yes/no) of each event in the past 5 years. These items were not included in the initial scope of work and thus not available

	in the harmonized data though offer a good opportunity to examine recent stressful life events. Since the childhood adversity items were asked at multiple waves, there is potential for participants to have different scores at each wave. Consistency of reporting across waves is itself an interesting question that has received attention in the childhood adversity literature. For those interested in selected a 'single' exposure count for a respondent's childhood adversity exposure, we suggest using the value from the <u>first time people were asked these items.</u> This panel variable is included in the dataset. For the count of lifetime trauma, this also varies by wave, though this is to be expected since participants between waves may be exposed to addition traumas. Thus, for a single exposure variable, we suggest using the summary score from <u>the most recent time</u> the participant answered the questions. This panel variable is included in the dataset as well.
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 - 2012	At Wave 3 as part of the Life History project, participants were asked to complete a "Difficult Life Events" inventory which queried the occurrence of 16 negative life events or traumas over the life course (these were yes / no questions): • major fire, flood, earthquake or other natural disaster • life-threatening illness or accident • victim of a serious physical attack or assault • victim of a sexual assault • husband, wife, partner or child addicted to drugs or alcohol • combat experience • witnessed the serious injury or death of someone in war or a military action • witnessed the serious injury or death of someone not related to a military action • lost a close friend or relative in a war or military service • loss, or risk of loss, of a close friend or relative due to serious illness or accident • provided long-term care to a disabled or impaired relative or friend • experienced severe financial hardship Participants were also asked to **indicate the age (earliest occurrence)** at which an event occurred. Under the age of 16: • parents unemployed for more than 6 months • parents fighting or arguing often • parents drinking excessively, taking drugs, or having mental health problems • physically abused by parents • parents separated or divorced • separated from mother for more than 6 months

	The Life History Interview also assesses death of a child, loss of a pregnancy/fetus (i.e., miscarriage, abortion, stillbirth). This data was not included in the current scope of work though is available and could be added to the lifetime stressor index. Participants' self-rated health before age 15 was also asked (ranging from 1 being Excellent to 5 being Poor). Summary variables created: Lifetime (includes childhood score) and childhood summaries Maternal and paternal warmth were asked with 5 items: - How much the respondent agrees that their mother (mother figure) and father (father figure) let them do the things they liked doing before the age of 16; - How much the respondent agrees that their mother (mother figure) and father (father figure) seemed emotionally cold to them before age 16; - How much the respondent agrees that their mother (mother figure) and father (father figure) appeared to understand their problems and worries before age 16; - How much the respondent agrees that their mother (mother figure) and father (father figure) liked them to make their own decisions before age 16; - How much the respondent agrees that their mother (mother figure) and father (father figure) made them feel they were not wanted before age 16; Response scale was strongly disagree (1) to strongly agree (4). Summary scores for maternal, paternal, and parental (both mother and father) were created by averaging the five items.
SHARE Available waves: 1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	Childhood: - Ever miss school for a month or more because of a health condition before age 15? Yes/ no response options - During childhood, did any of your parents or guardians smoke, drink heavily, or have mental health problems? Check all that apply. - Parental smoking status is not considered a childhood stressor or potential trauma and thus is not included in this dataset. - Whether they experienced difficult living circumstances, and if so, what year? (we calculated a variable to indicate if this occurred before age 16, yes/no) - If yes, several options were offered: lived in a children's home, homeless, fostered with another family, evacuated /relocated during war, lived in prisoner or war camp, lived in prison, lived in labor camp, lived in concentration camp, inpatient in tb institution, stayed in psychiatric hospital.

	o If yes to any of these, dates for those experiences were collected. • Whether they experienced financial hardship, and if so, what year? (we calculated a variable to indicate if this occurred before age 16, yes/no) Death of a child was captured at wave 3 (SHARELIFE, Life History) though that is not included here because it was out of scope of work to include sequenced life events in the SHARELIFE/ Life History Questionnaire.

TILDA
 	
Available waves:
1 - 2010
2 - 2012
	At Waves 1 and 2, TILDA assessed the lifetime occurrence of six major events/traumas:
	  • death of a child
	  • **major earthquake, fire, flood, natural disaster**
	  • **victim of a serious physical attack/assault**
	  • **life-threatening illness or accident**
	  • life-threatening illness or accident of a spouse or child
	  • spouse, partner or child addicted to drugs or alcohol
	
	Participants are asked to indicate the occurrence of each event (yes/no) and the year of the most recent occurrence. A summary measure of lifetime trauma experience can be computed as the sum of the number of traumas experienced. In the harmonized dataset, only the items in bold are included. This is because those are the only items available in the public TIDLA dataset. Some items were excluded from the public dataset because of concerns of identifiability of participants.
	
	At Wave 1, respondents were also asked about events/experiences in childhood/adolescence (before the age of 18):
	
	  • **a drug or alcohol problem of a parent that caused problems in the family**
	  • repeating a year of school
	  • physical abuse by a parent/parents
	  • physical abuse by someone other than parents
	  • sexual abuse by a parent/parents
	  • sexual abuse by someone other than parents
	  • financial strain before age 14 (see chronic stressor category for further description)
	
	Respondents indicate the occurrence (yes/no) of each early life experience, and the year of the most recent occurrence. A summary measure of early life stressor experience could be computed as the sum of the number of the 6 events experienced before the age of 18 though due to lack of data available in the public TILDA dataset, this was not created in the harmonized dataset.

JSTAR	Death of a child at Wave 2 and 3

Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	
KLoSA Available waves: 1 - 2006 2 - 2008 3 - 2010 4 - 2012	Death of a child waves 2, 3 and 4 Life-threatening illness or accident waves 1-4
CHARLS Available waves: 1 - 2010 2 - 2012	Death of a child at Wave 1 Life-threatening illness or accident at Wave 1 Female, male, or other guardian had problems with alcoholism or drug issues Before age 15, health problem Before age 15, missed school for one or more months due to health problem. Before age 17, financial situation.. Had good relationship with female guardian Had good relationship with male guardian.. In CHARLS, respondents are asked to compare their health condition and financial situation to other people, whereas HRS only asked the respondent to rate their own health condition and financial situation. HRS asked respondents whether their parent's drinking and drug behavior caused a problem to the family in a single question where as CHARLS asked respondents about their father and mother's misbehavior separately.
MHAS Available waves: 1 - 2001 2 – 2003 3 - 2012 4 - 2015	Death of a child at Waves 1-3 Natural disaster, earthquake, flood or fire at Wave 3 Victim of a serious attack or assault at Wave 3
CRELES	Waves 2-5: Death of a child Waves 1 & 5: Car accident Waves 4 & 5: Unemployment question

Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Participants were also asked to report on their self-reported health while they were growing up before age 16 from excellent (1) to poor (5) though this is not considered a stressful life event or trauma and thus not included in summary scores.

IV.2 Chronic Burdens or Strains

Chronic, or long-lasting, situations characterized by threat, burden or negativity are hypothesized to serve as potent stressors. One commonly-used self-report measure of chronic stress or strain (Bromberger & Matthews, 1996) asks respondents to indicate the experience (yes/no) of strain lasting 12 months or longer in a number of life domains (e.g., financial, work, close relationships) and to additionally rate how upsetting (not upsetting, somewhat upsetting, very upsetting) each reported ongoing strain is. HRS and CRELES both included measures that were similar to this, and while the two batteries do overlap with 3 domains in common: (1) personal health, (2) work, and (3) financial stain, respondents were asked to rate different aspects of the experience (i.e., how upsetting in HRS and how long an experience lasted in CRELES) and thus are not comparable. ELSA and TILDA each also had items that could be considered chronic burdens/ strains but the items were unique to each study and thus do not allow for cross-study comparisons.

Measure Source:

Bromberger, J. T. & Matthews, K. A. (1996). A longitudinal study of the effects of pessimism, trait anxiety, and life stress on depressive symptoms in middle-aged women. *Psychology and Aging, 11*(2), 207-213.

Representative publications:

Birditt, K. S., Newton, N. J., Cranford, J. A., & Ryan, L. H. (2016). Stress and Negative Relationship Quality among Older Couples: Implications for Blood Pressure. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences, 71*(5), 775-785. [utilized HRS data]

Palgi, Y. (2013). Ongoing cumulative chronic stressors as predictors of well-being in the second half of life. *Journal of Happiness Studies, 14*(4), 1127-1144. doi: 10.1007/s10902-012-9371-1 [utilized HRS data]

Troxel, W. M., Matthews, K. A., Bromberger, J. T., & Sutton-Tyrrell, K. (2003). Chronic stress burden, discrimination, and subclinical carotid artery disease in African American and Caucasian women. *Health Psychology, 22*(3), 300-309.

Table IV.2. Assessment of Chronic Burdens or Strains in the HRS Family of Studies

STUDY	Assessment of Chronic Burdens or Strains
HRS Available waves: 7 - 2004 8 - 2006 10 - 2010 11 - 2012 12 - 2014	Participants were asked to report on the experience of ongoing difficulties in 8 domains at the 2004, 2006, 2010, 2012 and 2014 assessment waves. The 8 domains for which the experience of strain were assessed included: • Ongoing health problems (self) • Ongoing emotional or physical problems (spouse or child) • Ongoing problems with alcohol or drug use in family member • Ongoing difficulties at work • Ongoing financial strain • Ongoing housing problems • Ongoing problems in close relationship • Helping at least one sick, limited, or frail family member or friend on a regular basis

	Participants were asked to indicate whether any of the above were current and ongoing problems lasting 12 months or longer and the degree of upset experienced in relation to each problem (1 – No, didn't happen, 2 – Yes, but not upsetting, 3 – Yes, somewhat upsetting, 4 – Yes, very upsetting).
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 – 2012	ELSA does not contain assessments of ongoing (i.e., 12 months or longer) problems. However, ELSA does query the experience of problems or strain with finances and housing [waves 1 – 6]: • Respondents are asked to indicate how well they are getting along financially "these days" (1-manage very well to 6-have severe financial difficulties). • Respondents are also asked to comment on whether their housing accommodation is characterized by any of 13 different problems (shortage of space, noise from neighbors, other street noise, too dark/not enough light, pollution, grime, or other environmental problems, damp floors/walls, water getting in from roof/gutters/windows, bad condensation problem, electrical or plumbing problem, rotting/decay, pest problem, too cold in winter, other problem).
SHARE Available waves: 1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	Not assessed.
TILDA Available waves: 1 - 2010 2 – 2012	TILDA does not contain assessments of current chronic stressors. However, TILDA does query the experience of problems or strain with finances while growing up, before age 14: • Respondents self-rated family financially situation while they were growing up before age 14. Response scale: 1 = pretty well off, 2 = about average, 3 = poor Note that in the Data Codebook, this item is included under childhood trauma/ major life events category since it was specific to childhood.
JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	Not assessed.

KLoSA Available waves: 1 - 2006 2 – 2008 3 - 2010 4 - 2012	Not assessed.
CHARLS Available waves: 1 - 2010 2 - 2012	Not assessed.
MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	Not assessed.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Beginning in Wave 4, respondents were asked whether a variety of life domains made them feel "stressed or anxious." Specifically, they were asked to indicate whether they felt stressed or anxious (yes/no) regarding each of five life domains and, if so, for how long they had felt that way (more than a year, less than a year). The domains were: • Health • Financial situation • Work problems • Family obligations • Health of parents or other relatives These items were administered in Waves 4 and 5.

IV.3 Job Strain, Stress and Dissatisfaction

Occupation-associated stress and strain has long been studied for a potential negative impact on mental and physical health (Kivimaki & Kawachi, 2015). Job strain measures typically assess negative working conditions, challenging demands, and a lack of social support and decision-making authority on the job. Karasek's demand-control model of work-based strain identifies high demands in a context of low control or decision-making latitude as a potent combination for poor health (e.g., Karasek et al., 1981, 1988). Subsequent theorists, as well as Karasek and colleagues, additionally emphasized the negative impact of low workplace social support or isolation. Thus, most measures include assessments of demands, perceived control and decision-making authority, and perceived support from co-workers and/or a supervisor.

Measure Source(s):

Karasek, R. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly, 24*(285), 308.

Karasek, R., & Theorell, T. (1990). *Healthy work: stress, productivity, and the reconstruction of working life*. New York, NY: Basic Books.

Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology, 3*(4), 322-355.

Relevant Publications:

Karasek, R.A., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands, and cardiovascular disease: a prospective study of Swedish men. *American Journal of Public Health, 71*, 694-705.

Karasek, R. A., Theorell, T., & Schwartz, J. E. (1988). Job characteristics in relation to the prevalence of myocardial infarction in the US health examination survey (HES) and the health and nutrition examination survey (HANES). *American Journal of Public Health, 78*, 910-918.

Kivimaki, M., & Kawachi, I. (2015). Work Stress as a Risk Factor for Cardiovascular Disease. *Current Cardiology Reports, 17*(9), 9.

Mezuk, B., Kershaw, K. N., Hudson, D., Lim, K. A., & Ratliff, S. (2011). Job Strain, Workplace Discrimination, and Hypertension Among Older Workers: The Health and Retirement Study. *Race and Social Problems, 1,* 38.

Table IV.3. Assessment of Job Strain/Stress in the HRS Family of Studies

STUDY	Assessment of Job Strain/Stress

HRS
 	
Available waves:
1 - 1992 to
6 - 2002
7 - 2004
	Job stress and dissatisfaction are assessed with 15-items taken from the widely-used Karasek Job Content Questionnaire (Karasek et al., 1998). Participants are asked to rate their degree of agreement (1-strongly disagree to 4-strongly agree; 5-not applicable) with items assessing job demands (e.g., time pressure, amount of work, little security) and a sense of control or decision-making capacity:
	   1. All things considered I am satisfied with my job.
	   2. My job is physically demanding.
	   3. I receive the recognition I deserve for my work.

8 - 2006 9 - 2008 10 - 2010 11 - 2012 12 - 2014	4. My salary is adequate. 5. My job promotion prospects are poor. 6. My job security is poor. 7. I am under constant time pressure due to a heavy workload. 8. I have very little freedom to decide how I do my work. 9. I have the opportunity to develop new skills 10. I receive adequate support in difficult situations. 11. At work, I feel I have control over what happens in most situations. 12. Considering the things I have to do at work, I have to work very fast. 13. I often feel bothered or upset in my work. 14. In my work I am free from conflicting demands that others make. 15. The demands of my job interfere with my personal life. These items are administered at the 2006, 2008, 2010 and 2012 waves. Development of summary scores: A summary score of 6 different job stress questions was calculated with items 1, 2, 4, 6, 7, and 9. This summary score is the harmonizable with the summary scores created for SHARE, ELSA, and JSTAR. This summary score is not available in wave 12 because the only item asked in that wave was item 1. HRS also includes 5 items from the General Social Survey that assess the quality of the work environment: • I have too much work to do everything well. • I have a lot to say about what happens on my job. • Promotions are handled fairly. • I have the training opportunities I need to perform my job safely and competently. • The people I work with can be relied on when I need help. Respondents are asked to rate their degree of agreement (1=strongly disagree to 4-strongly agree; 5-does not apply) with each statement. These items were administered at the 2008, 2010 and 2012 waves. Coworker support is measured with ratings of agreement (1-strongly disagree to 4-strongly agree; 5-does not apply) with 3 items assessing emotional and instrumental support: • My coworkers listen to me when I need to talk about work-related problems. • My coworkers help me with difficult tasks. • My coworkers help me in crisis situations at work. These items were administered at the 2008, 2010 and 2012 waves. Supervisor support is measured with ratings of agreement (1-strongly disagree to 4-strongly agree; 5-does not apply) with 4 items assessing instrumental and other forms of support from supervisors. • My supervisor is helpful to me in getting the job done.

	• My supervisor is willing to extend himself/herself to help me perform my job. • My supervisor takes pride in my accomplishments at work. • My supervisor tries to make my job as interesting as possible. These items were administered at the 2008, 2010 and 2012 waves. As described in the discrimination section, chronic work discrimination is measured with 6 items assessing frequency (1=never to 6=almost every day) of various forms of discrimination at work: • How often are you unfairly given the tasks at work that no one else wants to do? • How often are you watched more closely than others? • How often are you bothered by your supervisor or coworkers making slurs or jokes about women or racial or ethnic groups? • How often do you feel that you have to work twice as hard as others at work? • How often do you feel that you are ignored or not taken seriously by your boss? • How often have you been unfairly humiliated in front of others at work? These items were administered at the 2006, 2008, 2010 and 2012 waves.
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 – 2012	ELSA administered a 12-item version of the Karasek job demands, control and decision latitude measure. Respondents were asked to indicate degree of agreement with a 4-point (strong agree to strongly disagree) rating scale. 1. All things considered I am satisfied with my job. 2. My job is physically demanding. 3. I receive the recognition I deserve for my work. 4. My salary is adequate. 5. My job promotion prospects are poor. 6. My job security is poor. 7. I am under constant time pressure due to a heavy workload. 8. I have very little freedom to decide how I do my work. 9. I have the opportunity to develop new skills. 10. I receive adequate support in difficult situations. 11. At work, I feel I have control over what happens in most situations. 12. Considering the things I have to do at work, I have to work very fast. These items were administered at Waves 2 to 6. The last two items above were administered at Wave 1 although with an alternative 6-point rating scale (strongly agree to strongly disagree). Development of summary scores: A summary score of 6 different job stress questions was calculated with items 1, 2, 4, 6, 7, and 9. This summary score is the harmonizable with the summary scores created for SHARE, HRS, and JSTAR.
SHARE	SHARE administered a 10-item version of the Karasek job demands, control and decision latitude measure. Respondents were asked to indicate degree of

Available waves: 1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	agreement with each item using a 4-point scale (strong agree to strongly disagree): 1. All things considered I am satisfied with my job. 2. My job is physically demanding. 3. I receive the recognition I deserve for my work. 4. Considering all my efforts and achievements, my salary is/earnings are adequate. 5. My job promotion prospects/prospects for job advancement are poor. 6. My job security is poor. 7. I am under constant time pressure due to a heavy workload. 8. I have very little freedom to decide how I do my work. 9. I have the opportunity to develop new skills. 10. I receive adequate support in difficult situations. These items were administered at Waves 1, 2, 4 and 5. Development of summary scores: A summary score of 6 different job stress questions was calculated with items 1, 2, 4, 6, 7, and 9. This summary score is harmonizable with those created for HRS, ELSA, and TILDA. Note that the item wording for item 4 is slightly different in SHARE than in HRS and ELSA though it was determined to be similar enough to create a summary score that is harmonizable across studies.
TILDA Available waves: 1 - 2010 2 – 2012	At Wave 1, work discrimination was assessed by querying whether the participant had in the past 12 months been subjected to discrimination at work. See the discrimination section further details.
JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	At Waves 1 – 4, JSTAR administered up to 10 items assessing job satisfaction, demands, support and decision latitude, and likelihood of job loss or lack of advancement opportunity. 1. Overall, I am satisfied with my current job. 2. My current job involves physical labor. 3. I have a lot of work and always feel time pressure. 4. I don't have very much discretion about how I do my job. In other words, I can't decide about anything on my own. 5. When I have difficulty performing tasks, my colleagues offer advice and help me. 6. I think that my work performance is evaluated fairly by my co-workers. 7. Taking all factors into consideration, including my efforts and dedication as well as the business performance of the company, I am satisfied with my current pay. [slight variation in wording of this item for some Wave 2 and 3 cities] 8. My current job offers me opportunities to gain new skills. [not included in Wave 1 battery]

	9. What do you think is the likelihood of losing your current job for a reason other than reaching your retirement age? [slight variation in wording of this item for some Wave 2 and 3 cities] 10. I have poor prospects for promotion at the current job (if the respondent is a company employee) or My business has poor prospects for growth (if the respondent is self-employed), [not included in Wave 1 battery] [slight variation in wording of this item for some Wave 2 and 3 cities] For items 1 – 8, respondents were asked to indicate degree of agreement with each item using a 4-point scale (strongly agree to strongly disagree), with 'don't know' as a fifth option. For items 9 and 10 the response scales were different. See Data Codebook for details. Development of summary scores: A summary score of 6 different job stress questions was calculated with items 1, 2, 3, 7, 8, 9. This summary score is harmonizable with those created for HRS, ELSA, and TILDA. Note that the item wording is slightly different in JSTAR than the other studies though it was determined that the items were similar enough to harmonize across studies.
KLoSA Available waves: 1 - 2006 2 - 2008 3 - 2010 4 - 2012	KLoSA included 6 items assessing job satisfaction, demands and security. 1. My job is require lots of physical effort. 2. My job requires me to do more challenging tasks than it used to. 3. My salary is adequate. 4. My job security is good.* 5. My job involves a lot of stress. [item not included at Wave 1] 6. All things considered, I am satisfied with my current job. These items were administered at Waves 1-4. Response scale: 1 = strongly agree to 4 = strongly disagree. Note that this is the reverse direction of the HRS response scale and thus in the corresponding dataset to this manual, the item is reverse scored. Items 1, 3, 4, and 6 are from the Karasek scale that is used in HRS, ELSA, and TILDA. *Note that in the Karasek scale, the word is "poor" instead of "good" and thus should be reverse scored in order to be comparable.
CHARLS Available waves: 1 - 2010 2 - 2012	Not assessed.

MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	Not assessed.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Not assessed.

IV.4 Discrimination Experience

Both the experience of major discriminatory life events and more subtle forms of discrimination in everyday life are linked with poorer mental and physical well-being. Measures of the lifetime experience of discriminatory events (e.g., being fired, not promoted, harassed by the police) and the frequency of everyday discrimination experiences (e.g., receiving poorer service) were added to the HRS beginning in 2006. ELSA also added a measure of everyday discrimination in waves 5 and 6. In both studies, participants are asked to indicate all of the reasons (e.g., sex, race, religion, sexual orientation) why they believed they were a target of discrimination if it occurred. In HRS, a summary measure of lifetime discrimination can be computed by totaling the number of discriminatory events experienced. The frequency of everyday discrimination experiences can be assessed as the average of frequency ratings (1-almost every day to 6-never; ratings must first be reversed before averaging so that higher scores indicate greater frequency of occurrence). HRS and TILDA also include measures of the occurrence of discrimination at work in the past year.

Measure Sources:

Williams, D.R., Yu, Y., Jackson, J.S., & Anderson, N.B. (1997). Racial differences in physical and mental health: socio-economic status, stress and discrimination. *Journal of Health Psychology, 2*, 335-351.

Relevant Publications:

Pascoe, E. A., & Richman, L. S. (2009). Perceived Discrimination and Health: A Meta-Analytic Review. *Psychological Bulletin, 135*(4), 531-554.

Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: evidence and needed research. *Journal of Behavioral Medicine, 32*(1), 20-47.

Table IV.4. Assessment of Lifetime Discrimination Experiences in the HRS Family of Studies

STUDY	Assessment of Discrimination Experiences
HRS Available waves: 1 - 1992 to 6 - 2002 7 - 2004 8 - 2006 9 - 2008 10 - 2010 11 - 2012 12 - 2014	The 2006, 2008, 2010 and 2012 waves of HRS assessed the lifetime experience (yes/no) of seven discriminatory events: • Unfairly dismissed from a job • Unfairly not hired for a job • Unfairly denied a promotion • Unfairly prevented from moving into a neighborhood • Unfairly denied a bank loan • Unfairly stopped, searched, questioned, physically threatened, abused by police • Unfairly denied health care or treatment [not administered in 2006] If a respondent indicated the occurrence of an event, he/she was asked to report the year of the most recent occurrence. A summary score of lifetime discrimination experience score was computed as the sum of the number of affirmative responses. A measure of everyday discrimination experience was also included at the 2006, 2008, 2010, 2012 and 2014 waves. Respondents were asked to indicate the frequency (1-almost every day to 6-never) with which they experience: • Being treated with less courtesy or respect than other people

	• Receiving poorer service than others at restaurants or stores • People acting as if they were not smart • People acting as if they are afraid of them • Being threatened or harassed • Receiving poorer service or treatment than other people from doctors or hospitals. [not administered in 2006] A mean score was calculated from the first five items (without the question about treatment from doctors) in order to harmonize with ELSA. Higher scores indicating greater experiences of discrimination. When the sixth item was available, a mean score was also calculated for the six items. Reasons for discrimination: If respondents indicate the experience of any form of discrimination, they are asked to indicate all of the reasons why they believe they were the target of discrimination. Participants can indicate up to 11 attributions (i.e., because of gender, race, age, religion, ancestry or national origin, weight, a physical disability, other aspects of physical appearance, sexual orientation, financial status, other) for their discrimination experiences. Response scale is yes/no. A summary score calculated by adding up the total attributes the respondent endorsed. Work discrimination was assessed by querying the frequency (1-never to 6-almost every day) of discrimination at work in the last 12 months: • How often are you unfairly given the tasks at work that no one else wants to do? • How often are you watched more closely than others? • How often are you bothered by your supervisor or coworkers making slurs or jokes about women or racial or ethnic groups? • How often do you feel that you have to work twice as hard as others at work? • How often do you feel that you are ignored or not taken seriously by your boss? • How often have you been unfairly humiliated in front of others at work? A mean score was calculated from these six items. For comparison with ELSA, a mean score utilizing only five items was also calculated (since ELSA did not include a 6th item that HRS did).
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008	A subset of everyday discrimination items were added to ELSA at Wave 5. Respondents were asked to indicate the frequency (1-almost every day to 6-never) with which they experience: • Being treated with less courtesy or respect than other people • Receiving poorer service than others at restaurants or stores • People acting as if they were not clever [note 'clever' used in lieu of 'smart'] • Being threatened or harassed

5 - 2010 6 - 2012	• Receiving poorer service or treatment than other people from doctors or hospitals A mean score was calculated at each wave these items were available. These are the same items included in HRS and thus can be harmonized. A sixth item that is included in HRS is not included in ELSA. Reasons for discrimination: If respondents indicate the experience of any form of discrimination, they are asked to indicate all of the reasons why they believe they were the target of discrimination. Participants can indicate up to 9 attributions (i.e., because of gender, race, age, weight, a physical disability, other aspects of physical appearance, sexual orientation, financial status, other) for their discrimination experiences [note: religion and ancestry or national origin not offered as potential sources of discriminatory behavior]. These items were administered at Waves 5 and 6. A summary score calculated by adding up the total attributes the respondent endorsed.
SHARE Available waves: 1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	Not assessed.
TILDA Available waves: 1 - 2010 2 - 2012	At Wave 1, work discrimination was assessed by querying whether the participant had in the past 12 months been subjected to discrimination **at work** on the basis of: • Sex/gender • Age • Nationality • Ethnic background • Religion • Disability • Sexual orientation Respondents indicated whether or not they experienced each type of discrimination. Response scale was yes/ no to whether they experienced each type of discrimination. A summary count variable was computed by summing the number of reasons for discrimination. Total score range could be 0 – 7.

JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	Not assessed.
KLoSA Available waves: 1 - 2006 2 - 2008 3 - 2010 4 - 2012	Not assessed.
CHARLS Available waves: 1 - 2010 2 - 2012	Not assessed.
MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	Not assessed.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Not assessed.

IV.5 Social strain and unsupportive relationships

Social relations characterized by conflict or low support are hypothesized to be potent sources of stress that are linked to our health, well-being, and longevity (Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988; Seeman, 2000; Uchino, 2006). Commonly assessed characteristics include the degree to which social relationship targets can be relied upon, are sources of emotional support, and understand the respondent, as well as the degree to which they make too many demands, criticize, irritate, or let the respondent down when he or she is counting on them. HRS, ELSA, TILDA, JSTAR, and MHAS assess such qualitative characteristics of relationships with various targets (e.g., spouses, children, family, friends). SHARE assesses the frequency of instrumental support given and received and CRELES the availability of emotional support.

Measure Sources:

Moos, R. H., & Moos, B. S. (1994). Life stressors and social resources inventory. Odessa, FL: Psychological Assessment Resources.

Schuster, T. L., Kessler, R. C., & Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology, 18*(3), 423-438.

Relevant Publications:

Walen, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family, and friends: Costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships, 17*(1), 5-30.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social Relationships and Mortality Risk: A Meta-analytic Review. *Plos Medicine, 7*(7).

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241*(4865), 540-545.

Seeman, T. E. (2000). Health promoting effects of friends and family on health outcomes in older adults. *Am J Health Promot, 14*(6), 362-370.

Uchino, B. N. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine, 29*(4), 377-387.

Representative Publications:

Birditt, K. S., Newton, N. J., Cranford, J. A., & Ryan, L. H. (2016). Stress and Negative Relationship Quality among Older Couples: Implications for Blood Pressure. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences, 71*(5), 775-785.

Table IV.5. Assessment of Social Strain and Unsupportive Relationships in the HRS Family of Studies

STUDY	Assessment of Social Strain and Unsupportive Relationships
HRS Available waves: 1 - 1992 to	At waves 8 through 12, supportive and conflictual qualities of relationships with spouses, children, family and friends are assessed by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 7 statements are of each relationship type: • How much do they really understand the way you feel about things? • How much can you rely on them if you have a serious problem?

6 - 2002 7 - 2004 8 - 2006 9 - 2008 10 - 2010 11 - 2012 12 - 2014	• How much can you open up to them if you need to talk about your worries? • How often do they make too many demands on you? • How much do they criticize you? • How much do they let you down when you are counting on them? • How much do they get on your nerves? The mean of these items was calculated (after reverse scoring so higher is worse) for each relationship separately to create a summary score. This summary score is harmonizable with ELSA and TILDA
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 - 2012	At waves 1 to 6, supportive and conflictual qualities of relationships with spouses, children, family and friends are assessed by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 7 statements are of each relationship type: • How much do they really understand the way you feel about things? • How much can you rely on them if you have a serious problem? • How much can you open up to them if you need to talk about your worries? • How often do they make too many demands on you? • How much do they criticize you? • How much do they let you down when you are counting on them? • How much do they get on your nerves? The mean of these items was calculated (after reverse scoring so higher is worse) for each relationship separately to create a summary score. This summary score is harmonizable with HRS and TILDA.
SHARE Available waves: 1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	Social support was assessed only in SHARE Waves 1 and 2, with 21 items inquiring any help received from or given to someone outside of the household (family member, friend, or neighbor). Respondents were asked to specify the target that received/gave support by listing relations, which types of help were given (personal care, practical household help, or help with paperwork), how often help was received/given (daily, weekly, monthly, less often), hours received/given, and how often support was given to caring for grandchildren.
TILDA Available waves: 1 - 2010 2 - 2012	At Waves 1 and 2, supportive and conflictual qualities of relationships with spouses, children, family and friends are assessed (in separate items) by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 7 statements are of each relationship type: 1. How much do they really understand the way you feel about things? 2. How much can you rely on them if you have a serious problem? 3. How much can you open up to them if you need to talk about your worries?

	4. How often do they make too many demands on you? 5. How much do they criticize you? 6. How much do they let you down when you are counting on them? 7. How much do they get on your nerves? The mean of these items was calculated (after reverse scoring so higher is worse) for each relationship separately to create a summary score. This summary score is harmonizable with HRS and ELSA. Although these items were asked in Wave 2, this data is not available in the Wave 2 public dataset.
JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	In Waves 1 and 2, respondents were asked: • Do you feel that the following people would be concerned if you had a problem or were worried about something? • If you were bedridden with an illness, do you think the following people would take care of you or do things for you? • Would you be concerned if the following people had a problem or were worried about something? • If the following people were bedridden with an illness, would you care for them or do things for them? In Wave 3, respondents were asked: • Do you think your family, relatives, friends, etc. would sympathize and care for you if you have concerns or worries? • Do you think your family, relatives, friends, etc. would take care of you and run errands for you if you get sick and become bedridden? • Would you take care of your family, relatives, friends, etc. or be asked to run errands for them if they get sick and become bedridden? • Would you sympathize and care for your family, relatives, friends, etc. if they have concerns or worries?
KLoSA Available waves: 1 - 2006 2 - 2008 3 - 2010 4 - 2012	Not assessed.
CHARLS Available waves: 1 - 2010 2 - 2012	Not assessed.

MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	At Waves 2 and 3, MHAS assesses social support and conflict with the respondent's spouse, children, and friends/ acquaintances/ companions at work. Respondents are asked: • How much do he/she/they understand your feelings about things? • How much can you confide in him/her/them if you have a serious problem? • How much does he/she/they listen if you need to talk about your worries? • How much does he/she/they disappoint you when you are counting on them? Using a 3-point rating scale: 1=much, 2=a little, 3=not at all. A mean score was created for each (spouse, children, friends) relationship type. The first three items were reverse coded. Higher scores indicate less support. While the first three items are very similar to those used in HRS, ELSA, and TILDA, because the response scales are different we were not able to harmonize MHAS with these studies.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	At Waves 2-5, CRELES assesses the ability to talk to someone (1=never, 2=rarely, 3=sometimes, 4=frequently) about the following issues: • Personal or family issues • Work or home issues • Financial problems

IV.6 Loneliness

Most measures of loneliness assess feelings of isolation, disconnectedness and a lack of belonging, as well as the perception that one's social needs are not met by the quantity and/or quality of one's social relationships (Cacioppo et al., 2002; Hawkley & Cacioppo, 2010; Hughes et al., 2004). Perceived loneliness is posited to activate stress regulatory systems in the body which may underlie links between loneliness and health. Over a hundred investigations have indicated associations between greater feelings of loneliness and indicators of poorer health (Courtin & Knapp, 2017). Each study has at least one item that captures loneliness, and HRS, ELSA, SHARE, and TILDA have multi-item summary scores that can be compared cross-study.

Measure Source:

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys - Results from two population-based studies. *Research on Aging, 26*(6), 655-672.

Relevant Publications:

Cacioppo, J. T., Hawkley, L. C., Crawford, L. E., Ernst, J. M., Burleson, M. H., Kowalewski, R. B., . . . Berntson, G. G. (2002). Loneliness and health: potential mechanisms. *Psychosomatic Medicine, 64*(3), 407-417.

Courtin, E., & Knapp, M. (2017). Social isolation, loneliness and health in old age: a scoping review. *Health & Social Care in the Community, 25*(3), 799-812.

Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*(2), 218-227.

Representative Publications:

Poey, J.L, Burr, J.A., Roberts, S. (in press). Social connectedness, perceived isolation, and dementia: Does the social environment moderate the relationship between genetic risk and cognitive well-being? *The Gerontologist*. [utilizes HRS/ADAMS data]

Lincoln, K.D., Lloyd, D.A., & Nguyen, A.W. (in press). Social relationships and salivary telomere length among middle-aged and older African-American and white adults. *The Journals of Gerontology*. [utilizes HRS data]

Table IV.6. Assessment of Social Isolation and Loneliness in the HRS Family of Studies

STUDY	Assessment of Social Isolation and Loneliness
HRS Available waves: 1 - 1992 to 6 - 2002 7 - 2004 8 - 2006 9 - 2008	Loneliness in HRS is assessed with an adapted version of a subset of items from the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). Items were revised to be stated in the second, as compared to the first, person, to facilitate administration in a phone interview. Response options were also shortened from a four (*never, rarely, sometimes, often*) to three (*hardly ever or never, some of the time, often*) option response scale (see Hughes et al., 2004, for overview of adaptations). The exact items assessing loneliness varied slightly across some waves: • The 2002 assessment included 4 items assessing loneliness in an experimental module.

10 - 2010 11 - 2012 12 - 2014	• The 2004 survey included the same 3 items as part of the Lifestyle mail-back survey. • The 2006 Lifestyle mail-back survey included 3 of the 4 items included in the 2002 and 2004 surveys. • The 2008, 2010, 2012 and 2014 Lifestyle mail-back surveys included an expanded 11-item assessment. The specific items administered by wave are as follows: • How often do you feel you lack companionship? (2002, 2004, 2006, 2008, 2010, 2012, 2014) • How often do you feel left out? (2002, 2004, 2006, 2008, 2010, 2012, 2014) • How often do you feel isolated from others? (2002, 2004, 2006, 2008, 2010, 2012, 2014) • How often do you feel in tune with the people around you? (2002, 2004, 2008, 2010, 2012, 2014) [item not administered in 2006] Rating scale: 1-often, 2-some of the time, 3-hardly ever or never A mean score of the first three items was calculated at each wave, and when available, a four item scale. The three item summary score is harmonizable across SHARE, ELSA, and TILDA, and the four-item scale is harmonizable with ELSA and TILDA. Additional loneliness items in HRS include: • Alone? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • That there are people you can talk to? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • That there are people you can turn to? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • That there are people who really understand you? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • That there are people you feel close to? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • Part of a group of friends? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] • That you have a lot in common with the people around you? (2008, 2010, 2012, 2014) [item not administered in 2004 and 2006] Rating scale: 1-often, 2-some of the time, 3-hardly ever or never These additional items were not included in the original scope of work and thus are not available in the harmonization project dataset. These were added in wave 9.

	Of note, an indicator of loneliness was also included as part of the CESD depression assessment. Specifically, participants were asked to indicate whether they felt lonely during much of the past week. • Wave 1: Responded to: "During the past week, I felt lonely." (1-All or almost all of the time, 2-Most of the time, 3-Some of the time, 4-None or almost none of the time). • Wave 2 experimental module: Responded to: "I felt lonely (in the last week). (1-All or almost all of the time, 2-Most of the time, 3-Some of the time, 4-None or almost none of the time) • Waves 2 – 12: Responded to: "Much of the time, you felt lonely." (yes or no)
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 - 2012	Loneliness in ELSA was also assessed with an adapted version of a subset of items from the UCLA Loneliness Scale. Four items assessing loneliness were added at Wave 2 and a fifth item was included at Waves 3 and beyond. The second person, 3-option response rating utilized in HRS was used in the ELSA measurements. The specific items administered by wave are as follows: • How often do you feel you lack companionship? (Waves 2-6) • How often do you feel left out? (Waves 2-6) • How often do you feel isolated from others? (Waves 2-6) • How often do you feel in tune with the people around you? (Waves 2-6) • How often do you feel lonely? (Waves 3-6) [item not administered at Wave 2] Rating scale: 1-hardly ever or never, 2-some of the time, 3-often, Whether the participant felt lonely much of the time in the last week (yes or no) was also assessed as part of a modified CESD assessment in Waves 1-6. How often the participant felt "left out of things" (never, not often, sometimes, often) was also assessed as part of the Self-Administered Questionnaire in Waves 1-6, and is available in Section B. Health. Two summary scores were created following HRS. First, a mean score of the first 4 items and also a mean score of the first three items. The three-item mean score is harmonizable with SHARE and TILDA.

SHARE
 	
Available waves:
1 - 2004
2 - 2006
3 - 2008
4 - 2010
5 - 2012
	In Waves, 1, 2, 4, and 5, a single-item on loneliness was included in a measure of perceptions of aging.
	    How often do you feel left out of things?
	        Response scale: 1 = hardly ever or none, 2 = some of the time, 3 = often.
	
	In Waves 1 and 2, respondents were also asked to rate how often (1-almost all of the time, 2-most of the time, 3-some of the time, 4-almost none of the time) they felt lonely on the CESD [wave 1] or whether they felt lonely (1-yes, 5-no) on the CESD [wave 2]; item integrated into loneliness measure at waves 4 and 5. This item data for wave 1 and 2 is available in Section B. Health.

	In Waves 4 and 5, a four-item assessment of loneliness was administered:
	- How often do you feel you lack companionship? (Waves 4-5) - How often do you feel left out? (Waves 4-5; similar perceptions of aging item above also administered at these waves) - How often do you feel isolated from others? (Waves 4-5) - How often do you feel lonely? (Waves 4-5) Rating scale: 1-often, 2-some of the time, 3-hardly ever or never A mean summary score of items 1, 2, and 3 was calculated and can be harmonized across HRS, TILDA, and ELSA.
TILDA Available waves: 1 - 2010 2 - 2012	In Waves 1 and 2, loneliness was assessed with an adapted version of a subset of items from the UCLA Loneliness Scale. The specific items administered by wave are as follows: - How often do you feel you lack companionship? - How often do you feel left out? - How often do you feel isolated from others? - How often do you feel in tune with the people around you? - How often do you feel lonely? Rating scale: 1-often, 2-some of the time, 3-hardly ever or never Two summary scores were created following HRS. First, a mean score of the first 4 items and also a mean score of the first 3 items; this is harmonizable across HRS and ELSA. The three-item mean score is harmonizable with HRS, SHARE, and ELSA. Wave 3 also collected this information
JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	In Waves 1 and 2, feeling lonely was assessed in a single item as part of a depression assessment. Specifically, participants were asked to indicate how many days in the last week (none to 5 or more) they "felt lonely." The depression measure was administered at Waves 1 and 2. Because it is part of the CESD, this item is included in Section B.Health.
KLoSA Available waves: 1 - 2006	Respondents were asked to indicate how many days in the last week they felt alone ("How often did you feel alone last week?") with response options ranging from 1-very rarely (less than one day) to 4-almost always (5-7 days).*Note that although this wording is different from CESD this is due to language translation.

2 - 2008 3 - 2010 4 - 2012	This item was administered in Waves 1-4. Because it is part of the CESD, this data is included in Section B.Health.
CHARLS Available waves: 1 - 2010 2 - 2012	Wave 1 & 2 – included an item assessing loneliness ("I felt lonely") as part of a modified CESD Scale. Participants rated frequency of feeling lonely (1 – rarely or none of the time (<1 day), 2 – some or a little of the time (1-2 days), 3 – occasionally or a moderate amount of the time (3-4 days), 4 – most or all of the time (5-7 days) in the last week. Because it is part of the CESD, this item is included in Section B.Health.
MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	As part of a depression inventory, the respondent was asked if he/she "was lonely?" (wave 3) or "felt alone?" (wave 1, 2, 4) with response options of yes or no. Because it is part of the CESD, this item is included in Section B.Health.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Respondents were asked whether there were people they could talk to about: • Personal or family issues • Work or home issues • Financial problems Rating scale: 1-never, 2-rarely, 3-sometimes, 4-frequently

IV.7 Neighborhood physical disorder / neighborhood social cohesion

The physical and social characteristics of the neighborhoods in which individuals reside have been found to be linked to individual and area-level health (Diez-Roux & Mair, 2010; Meijer et al., 2012). Commonly assessed characteristics include individual perceptions of neighborhood characteristics, including the perceived level of disorder (vandalism, crime, rubbish, deterioration) and social cohesion/trust. There are overlapping (though slightly different) measures and items across HRS, ELSA, SHARE, and JSTAR. HRS and ELSA overlap on 8 items, allowing for cross-study comparison.

Measure Sources:

Cagney, K. A., Glass, T. A., Skarupski, K. A., Barnes, L. L., Schwartz, B. S., & de Leon, C. F. M. (2009). Neighborhood-Level Cohesion and Disorder: Measurement and Validation in Two Older Adult Urban Populations. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences, 64*(3), 415-424.

Echeverria, S. E., Diez-Roux, A. V., & Link, B. G. (2004). Reliability of self-reported neighborhood characteristics. *Journal of Urban Health-Bulletin of the New York Academy of Medicine, 81*(4), 682-701.

Mendes de Leon, C. F., Cagney, K. A., Bienias, J. L., Barnes, L. L., Skarupski, K. A., Scherr, P. A., & Evans, D. A. (2009). Neighborhood social cohesion and disorder in relation to walking in community-dwelling older adults a multilevel analysis. *Journal of Aging and Health,* 21, 155-171.Representative Publications:

Meijer, M., Rohl, J., Bloomfield, K., & Grittner, U. (2012). Do neighborhoods affect individual mortality? A systematic review and meta-analysis of multilevel studies. *Social Science & Medicine, 74*(8), 1204-1212.

Diez Roux, A. V., & Mair, C. (2010). Neighborhoods and health. *Annals of the New York Academy of Sciences, 1186*, 125-145.

Table IV.7. Assessment of Neighborhood Disorder and Lack of Cohesion in the HRS Family of Studies

STUDY	Assessment of Neighborhood Disorder and Lack of Cohesion
HRS Available waves: 1 - 1992 to 6 - 2002 7 - 2004 8 - 2006 9 - 2008 10 - 2010 11 - 2012 12 - 2014	HRS includes an 8-item assessment of physical disorder and lack of social cohesion/trust. Respondents utilize a 7-point scale with the following polar opposite characteristics at each end of the rating scale: 1. I really feel a part of this area - - - - - - - I feel that I don't belong in this area 2. There is no problem with vandalism and graffiti in this area - - - - - - - Vandalism and graffiti are a big problem in this area 3. Most people in this area can be trusted - - - - - - - Most people in this area can't be trusted 4. People feel safe walking alone in this area after dark - - - - - - - People would be afraid to walk alone in this area after dark 5. Most people in this area are friendly - - - - - - - Most people in this area are unfriendly 6. This area is kept very clean - - - - - - - This area is always full of rubbish and litter 7. If you were in trouble, there are lots of people in this area who would help you - - - - - - - If you were in trouble, there is nobody in this area who would help you

	8. There are no vacant or deserted houses or storefronts in this area - - - - - - - There are many vacant or deserted houses or storefronts in this area These items were administered in Waves 8 – 12. A summary score was created for physical disorder by taking the mean of items 2, 4, 6, 8. A summary score was created for social cohesion by taking the mean of items 1, 3, 5, 7. A single item assessment of neighborhood safety (5-point scale from excellent to poor) was administered at Waves 5 and 7.
ELSA Available waves: 1 - 2002 2 - 2004 3 - 2006 4 - 2008 5 - 2010 6 - 2012	ELSA includes a 9-item assessment of physical disorder and lack of social cohesion/trust. Respondents utilize a 7-point scale with the following polar opposite characteristics at each end of the rating scale: 1. I really feel a part of this area - - - - - - - I feel that I don't belong in this area 2. There is no problem with vandalism and graffiti in this area - - - - - - - Vandalism and graffiti are a big problem in this area 3. I have never felt lonely living in this area - - - - - - - I often feel lonely living in this area 4. Most people in this area can be trusted - - - - - - - Most people in this area can't be trusted 5. People feel safe walking alone in this area after dark - - - - - - - People would be afraid to walk alone in this area after dark 6. Most people in this area are friendly - - - - - - - Most people in this area are unfriendly 7. People in this area will always treat you fairly - - - - - - - People in this area will take advantage of you 8. This area is kept very clean - - - - - - - This area is always full of rubbish and litter 9. If you were in trouble, there are lots of people in this area who would help you - - - - - - - If you were in trouble, there is nobody in this area who would help you [Note that the exact items differ slightly from HRS assessment] These items were administered at Waves 1, 3, and 7. A summary score for physical disorder was created with items 2, 5, 8. A summary score for social cohesion was created with items 1, 4, 6, 9.
SHARE Available waves:	At Wave 5, items assessing neighborhood disorder and lack of cohesion were added. Respondents were asked to rate their degree of agreement (strongly agree, agree, disagree, strongly disagree) with the following statements: 1. I really feel a part of this area.

1 - 2004 2 - 2006 3 - 2008 4 - 2010 5 - 2012	2. Vandalism or crime is a big problem in this area. 3. This area is kept very clean. 4. If I were in trouble, there are people in this area who would help me. [Note that there is a difference in response scale from HRS and ELSA] Four items also assess ease (very easy, easy, difficult, very difficult) of getting to the bank, supermarket, doctor/health center and pharmacy.
TILDA Available waves: 1 - 2010 2 – 2012	Not assessed.
JSTAR Available waves: 1 - 2006 2 – 2008 3 – 2010 4 – 2012	The JSTAR neighborhood items were determined to be conceptually different other neighborhood items that capture aspects of perceived stress or support from the physical or social neighborhood environment. While we include description of the items below for information, these variables are not included in the harmonized dataset. At Wave 1, respondents were asked to respond (yes/no) to ten questions regarding the neighborhood environment: In regards to the local area: • Pharmacy and medical facilities are nearby • Shops selling groceries and daily needs [are] nearby • Park where you can walk and exercise safely nearby • Train station or bus stop nearby • There are pollution or noise problems • There are concerns about public order such as vandalism or crime • There is a location nearby to meet with friends In regards to the people who live near you: • Do you think you can trust most of them? • Do you think that others would take advantage of you given the opportunity? • Do you think most of them try to help others? Respondents were also asked to indicate that they thought of when they thought of the area "near" them (neighboring homes, same ward/school district/health district, etc., same city or town, same prefecture, other, nothing special came to mind). At Wave 2, for 5 cities, respondents were asked how long they had lived in their current neighborhood (less than 3 years to more than 30 years), whether they liked their area (5-point scale from very much to not at all) , and as at Wave 1 what they thought of when thinking of the area near them.

	At Wave 2 for 2 cities and Wave 3, respondents were asked about socialization with neighbors:
	- How closely do you associate with your neighbors? (helping each other in various aspects of life such as the giving and receiving of advice and the lending and borrowing of everyday items/close enough to chat almost daily on the street/having only minimal association that is no more than exchanging greetings/having no association) - Approximately how many neighbors do you associate with? (many of those living in the neighborhood (20 or more)/a considerable number of those in the neighborhood (5-19)/only a few immediate neighbors (4 or less)/ do not know who lives next door
KLoSA Available waves: 1 - 2006 2 - 2008 3 - 2010 4 - 2012	Not assessed.
CHARLS Available waves: 1 - 2010 2 - 2012	Not assessed.
MHAS Available waves: 1 - 2001 2 - 2003 3 - 2012 4 - 2015	Not assessed.
CRELES Available waves: 1 - 2004 2 - 2006 3 - 2008 4 – 2010 5 – 2012	Not assessed.

V. CONCORDANCE ACROSS SURVEYS

V.1. Cross-Study Concordance: Life Events and Traumas

Table V.1.1 Life Event and Trauma Items: Cross-Study Concordance

HRS	ELSA	SHARE	TILDA
Rating scale: [wave 8 (2006), wave 10 (2010, wave 11 (2012), wave 12 (2014)]			
Death of a child	Death of a child [life history interview]	Death of a child	Death of a child
Major earthquake, fire, flood, natural disaster	Major earthquake, fire, flood, natural disaster		Major earthquake, fire, flood, natural disaster
Combat experience	Combat experience		
	Witnessed the serious injury or death of someone in war or a military action		
	Witnessed the serious injury or death of someone not related to a military action		
	Lost a close friend or relative in a war or military service		
Victim of attack/assault	Victim of attack/assault		Victim of attack/assault
	Victim of a sexual assault		
Life-threatening illness or accident	Life-threatening illness or accident		Life-threatening illness or accident
Life-threatening illness or accident (spouse or child)	Loss, or risk of loss, of a close friend or relative due to serious illness or accident		Life-threatening illness or accident (spouse or child)
Spouse, partner, or child addicted to drugs or alcohol	Spouse, partner, or child addicted to drugs or alcohol		Spouse, partner, or child addicted to drugs or alcohol
	Provided long-term care to a disabled or impaired relative or friend		
	Experienced severe financial hardship		
	Loss of pregnancy/fetus [life history interview]		
Before age 18:			
Repeating a year of school			Repeating a year of school
Having trouble with the police			
	Parents unemployed for more than 6 months		
	Parents fighting or arguing often		
A drug or alcohol problem of a parent that caused problems in the family	Parents drinking excessively, taking drugs, or having mental health problems	[Did any of your parents or guardians . . . (a) smoke, (b) drink heavily, or (c) have mental health problems]	A drug or alcohol problem of a parent that caused problems in the family
Being physically abused by a parent	Being physically abused by a parent		Being physically abused by a parent
			Being physically abused by someone other than a parent
			Sexual abuse by a parent
			Sexual abuse by someone other than a parent
		Ever miss school for a month or more due to a health condition	
In the last 5 years:			
Involuntary job loss			
Unemployed and looking for work for at least 3 months			
Unemployment of another household member			
Moving to a worse residence or neighborhood			
Being robbed or having one's home burglarized			
Being a victim of fraud			

JSTAR	KLoSA	CHARLS	MHAS
Rating scale:			
Death of a child	Death of a child	Death of a child	Death of a child
			Major earthquake, fire, flood, natural disaster
			Victim of attack/assault
	Life-threatening illness or accident	Life-threatening illness or accident	
Loss, or risk of loss, of a close friend or relative due to serious illness or accident			
Divorce?			
Involuntary job loss?			
Unemployed and looking for work for at least 3 months?			
Unemployment of another household member?			

CRELES
Death of a child
Life-threatening illness or accident

V.2. Cross-Study Concordance: Chronic Burden Items

Table V.2.1 Chronic Burden Items: Cross-Study Concordance

HRS	ELSA	CRELES
Rating scale: Participants were asked to indicate occurrence of each ongoing problem and degree of upset experienced in relation to each (1-no, didn't happen, 2-yes, but not upsetting, 3-yes, somewhat upsetting, 4-yes, very upsetting) [wave 8 (2006), wave 10 (2010, wave 11 (2012), wave 12 (2014)]	Rating scale: See below	Rating scale: Felt stressed or anxious (yes/no) regarding each of five life domains and, if so, how long they had felt that way (more than a year, less than a year) [waves 4 & 5]
Ongoing health problems (self)		Health
Ongoing physical or emotional problems in spouse or child		
		Health of parents or other relatives
Ongoing alcohol or drug use in family member		
Ongoing difficulties at work		Work problems
Ongoing financial strain		Financial situation
Ongoing housing problems		
Ongoing problems in a close relationships		
		Family relations
Helping at least one sick, limited, or frail family member or friend on a regular basis.		Provide care to ailing parents [not included in summary measure as only asked as a follow-up question to those who indicate stress of taking care of a parent/parents due to health]
Related questions:		
Financial strain	Respondents are asked to indicate how well they are getting along financially "these days" (1-manage very well to 6-have severe financial difficulties) [waves 1-6]	Current economic situation (excellent, very good, good, average/normal, bad) [waves 1-5] Enough money to buy food (yes or no) [waves 2-5] Severe economic hardship (yes or no) [wave 4 only]

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Housing problems	Respondents are asked to comment on whether their housing accommodation is characterized by any of 13 difference problems (e.g., noise, rotting/decay, not enough space) [waves 1-6]	

V.3. Cross-Study Concordance: Job Stress, Strain, and Dissatisfaction Items

Items for a particular study which vary from those used in other studies are displayed in red font. Items in blue font are those which are the same across the multiple studies indicated.

Table V.3.1 Job Stress/Strain Items: Cross-Study Concordance

HRS	ELSA	SHARE	JSTAR	KLoSA
Rating scale: 4-point (strongly disagree to strongly agree)	Rating scale: 4-point (strongly agree to strongly disagree)	Rating scale: 4-point (strongly agree to strongly disagree)	Rating scale: 4-point (strongly agree to strongly disagree)	Rating scale: 4-point (strongly agree to strongly disagree)
All things considered I am satisfied with my job.	All things considered I am satisfied with my job.	All things considered I am satisfied with my job.	Overall, I am satisfied with my current job.	All things considered, I am satisfied with my current job.
My job is physically demanding.	My job is physically demanding.	My job is physically demanding.	My current job involves physical labor.	My job requires lots of physical effort.
I receive the recognition I deserve for my work.	I receive the recognition I deserve for my work.	I receive the recognition I deserve for my work.		
My salary is adequate.	My salary is adequate.	Considering all my efforts and achievements, my salary is/earnings are adequate.	Considering the effort I put in and the results I produce, I am satisfied with my current pay. [slight variation in wording of this item for some Wave 2 and 3 cities]	My salary is adequate.
My job promotion prospects are poor.	My job promotion prospects are poor.	My job promotion prospects/prospects for job advancement are poor.	The hope for promotion is not likely to be realized with this job. [for employed workers] or *I have little chance to develop current job. [for self-employed workers] [not included in Wave 1 battery] [slight variation in wording of this item for some Wave 2 and 3 cities]	
My job security is poor.	My job security is poor.	My job security is poor.		My job security is good.
I am under constant time pressure due to a heavy workload.	I am under constant time pressure due to a heavy workload.	I am under constant time pressure due to a heavy workload.	I have a lot of work and always feel time pressure.	
I have very little freedom to decide how I do my work.	I have very little freedom to decide how I do my work.	I have very little freedom to decide how I do my work.	I don't have very much discretion about how I do my job. In other words, I can't decide about anything on my own.	
I have the opportunity to develop new skills.	I have the opportunity to develop new skills.	I have the opportunity to develop new skills.	I have an opportunity to gain new skills in my current job. [not included in Wave 1 battery]	
I receive adequate support in difficult situations.	I receive adequate support in difficult situations.		When I have problems doing my work, colleagues give me advice and help me.	
At work, I feel I have control over what happens in most situations.	At work, I feel I have control over what happens in most situations.			
Considering the things I have to do at work, I have to work very fast.	Considering the things I have to do at work, I have to work very fast.			
I often feel bothered or upset in my work.				

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In my work I am free from conflicting demands that others make.				
The demands of my job interfere with my personal life.				
			I receive appropriate evaluations of my work from co-workers.	
				My job requires me to do more challenging tasks than it used to.
				My job involves a lot of stress. [item not included at Wave 1]
HRS included additional work assessments – see Job Strain section page 18				

Table V.3.2 Job Stress/Strain Item Aggregates

6-item:
All things considered I am satisfied with my job.
My job is physically demanding.
My salary is adequate.
My job security is poor.
I am under constant time pressure due to a heavy workload.
I have the opportunity to develop new skills.

8-item:
All things considered I am satisfied with my job.
My job is physically demanding.
I receive the recognition I deserve for my work.
My salary is adequate.
My job security is poor.
I am under constant time pressure due to a heavy workload.
I have very little freedom to decide how I do my work.
I receive adequate support in difficult situations.

9-item:
All things considered I am satisfied with my job.
My job is physically demanding.
I receive the recognition I deserve for my work.
My salary is adequate.
My job promotion prospects are poor.
My job security is poor.
I am under constant time pressure due to a heavy workload.
I have very little freedom to decide how I do my work.
I have the opportunity to develop new skills.

10-item:
All things considered I am satisfied with my job.
My job is physically demanding.
I receive the recognition I deserve for my work.
My salary is adequate.
My job promotion prospects are poor.
My job security is poor.
I am under constant time pressure due to a heavy workload.
I have very little freedom to decide how I do my work.
I have the opportunity to develop new skills.
I receive adequate support in difficult situations.

Additional items for 12-item aggregate:
At work, I feel I have control over what happens in most situations.
Considering the things I have to do at work, I have to work very fast.

Additional items for 15-item aggregate:
I often feel bothered or upset in my work.
In my work I am free from conflicting demands that others make.
The demands of my job interfere with my personal life.

Table V.3.3 Overview of multi-item measures of job stress/strain available in different studies:

Job Stress/Strain Scale	HRS	ELSA	SHARE	JSTAR	KLoSA
5-item	Waves 8-11	Waves 2-6	Waves 1,2,4,5	Waves 1-3	Waves 1-4
6-item	Waves 8-11	Waves 2-6	Waves 1,2,4,5	Waves 1-3	Waves 2-4
8-item	Waves 8-11	Waves 2-6	Waves 1,2,4,5	Waves 1-3	
9-item	Waves 8-11	Waves 2-6	Waves 1,2,4,5	Waves 1-3	
10-item	Waves 8-11	Waves 2-6		Waves 1-3	
12-item	Waves 8-11	Waves 2-6			

| 15-item | Waves 8-11 | | | | |

V.4 Cross-Study Concordance: Discrimination Items

Items for a particular study which vary from those used in other studies are displayed in red font. Items in blue font are those which are the same across the multiple studies indicated.

Table V.4.1 Discrimination Items: Cross-Study Concordance

HRS	ELSA	TILDA
Everyday Discrimination	**Everyday Discrimination**	---
Respondents were asked to indicate the frequency (1-almost every day to 6-never) with which they experience:	Respondents were asked to indicate the frequency (1-almost every day to 6-never) with which they experience:	
You are treated with less courtesy or respect than other people.	You are treated with less courtesy or respect than other people.	
You receive poorer service than other people at restaurants or stores	You receive poorer service than other people at restaurants or stores	
People act as if they think you are not smart.	People act as if they think you are not clever.	
You are threatened or harassed.	You are threatened or harassed.	
You receive poorer service or treatment than other people or from doctors or hospitals	You receive poorer service or treatment than other people or from doctors or hospitals	
People act as if they are afraid of you. [not administered in Wave 8 (2006)]		
If respondents indicated the experience of any form of discrimination, they were asked to indicate all of the reasons why they believed they were the target of discrimination. Participants could indicate up to 11 attributions (i.e., because of gender, race, age, religion, ancestry or national origin, weight, a physical disability, other aspects of physical appearance, sexual orientation, financial status, other) for their discrimination experiences.	If respondents indicate the experience of any form of discrimination, they are asked to indicate all of the reasons why they believe they were the target of discrimination. Participants could indicate up to 9 attributions (i.e., because of gender, race, age, weight, a physical disability, other aspects of physical appearance, sexual orientation, financial status, other) for their discrimination experiences [note: religion and ancestry or national origin not offered as potential sources of discriminatory behavior].	
Lifetime Discrimination	---	---
Assessed lifetime experience (yes/no), and year of occurrence, of seven discriminatory events:		
Unfairly dismissed from a job		
Unfairly not hired for a job		
Unfairly denied a promotion		
Unfairly prevented from moving into a neighborhood		
Unfairly denied a bank loan		
Unfairly stopped, searched, questioned, physically threatened, abused by police		
Unfairly denied health care or treatment [not administered in 2006]		
Wave 8 (2006), Wave 9 (2008), Wave 10 (2010), Wave 11 (2012)		
Related items: Work discrimination was assessed by querying the frequency (1-never to 6-almost every day) of discrimination at work in the last 12 months: • How often are you unfairly given the tasks at work that no one else wants to do? • How often are you watched more closely than others? • How often are you bothered by your supervisor or coworkers making slurs or jokes about women or racial or ethnic groups? • How often do you feel that you have to work twice as hard as others at work? • How often do you feel that you are ignored or not taken seriously by your boss? • How often have you been unfairly humiliated in front of others at work?	---	Related items: Work discrimination was assessed by querying whether the participant had in the past 12 months been subjected to discrimination at work on the basis of: • Sex/gender • Age • Nationality • Ethnic background • Religion • Disability • Sexual orientation Respondents indicated the occurrence, or lack thereof, of each type of discrimination experience.

V.5. Cross-Study Concordance: Social Strain and Unsupportive Relationships

Items for a particular study which vary from those used in other studies are displayed in red font. Items in blue font are those which are the same across the multiple studies indicated.

Table V.5.1 Social Strain and Unsupportive Relationships Items: Cross-Study Concordance

HRS	ELSA	TILDA	MHAS
Rating scale: Positive and negative characteristics of relationships with spouses, children, family and friends were assessed by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 7 statements are of each relationship type. [Administered at wave 8 (2006), wave9 (2008), wave 10 (2010, wave 11 (2012), wave 12 (2014)]	Rating scale: Positive and negative characteristics of relationships with spouses, children, and family were assessed by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 6 statements are of each relationship type.	Rating scale: Positive and negative characteristics of relationships with spouses, children, family, and friends (separately for family and friends) were assessed by asking respondents to rate how characteristic (1=a lot, 2=some, 3=a little, 4=not at all) each of 7 statements are of each relationship type. [Administered at wave 1 (2010) and wave 2 (2012)]	Rating scale: Positive and negative characteristics of relationships with spouses, children and friends were assessed by asking respondents to rate how characteristic (1=much, 2=a little, 3=not at all) each of 4 statements were of each relationship type.
How much do they really understand the way you feel about things?	How much do they really understand the way you feel about things?	How much do they really understand the way you feel about things?	How much do he/she/they understand your feelings about things?
How much can you rely on them if you have a serious problem?	How much can you rely on them if you have a serious problem?	How much can you rely on them if you have a serious problem?	How much can you confide in him/her/them if you have a serious problem?
How much can you open up to them if you need to talk about your worries?	How much can you open up to them if you need to talk about your worries?	How much can you open up to them if you need to talk about your worries?	How much does he/she/they listen if you need to talk about your worries?
How often do they make too many demands on you?		How often do they make too many demands on you?	
How much do they criticize you?	How much do they criticize you?	How much do they criticize you?	
How much do they let you down when you are counting on them?	How much do they let you down when you are counting on them?	How much do they let you down when you are counting on them?	How much does he/she/they disappoint you when you are counting on them?
How much do they get on your nerves?	How much do they get on your nerves?	How much do they get on your nerves?	
At Wave 2, the supportive and conflictual qualities of social relationships with three targets (spouse/partner, friends, coworkers) were assessed in HRS with two 3- item measures. Respondents were asked to how much (a lot, some, a little, not at all) each statement described their relationship with each target. The items were: • How much (is that person/are they) interested in the way you feel about things? • How much can you open up (that person/them) if you need to talk about your worries? • How much can you relax and be yourself around (that person/them)? • How often does (he/she or they) make too many demands on you? • How often (does that person/they) criticize you? • • How often (does that person/do they) let you down when you are counting on them?			
NOTES for 2002 measures [finish formatting text] The supportive and conflictual qualities of social relationships with three targets (spouse/other people			

that live with the respondent/friends) were assessed with a 4-item measure. The measure assesses how often the respondent feels that he/she can open up to the target, how often can the respondent rely on the target for help, how often does the target make too many demands on the respondent, and how often does the target criticize the respondent on a 3-point scale (1-hardly ever, 2-some of the time. 3-often).	

Unique measures in other studies:

JSTAR	SHARE	CRELES
<u>Rating scale</u>:		
JSTAR assesses social support received from four targets (spouse, children, family, friends) in terms of financial support, sympathy, and mutual dependence in times of sickness. The respondent was asked to identify networks who contributed to financial support, providing for food and other living expenses. Respondents were asked to identify each target in terms of relationship to the respondent using a 9-point system, ranging from spouse to other in CAPI Waves 1 and 2. SCQ Waves 1-3 assessed social support dependence, and inquired respondents rate each target using a 5-point (1-very much, 2-somewhat, 3-not so much, 4-not at all, 5-nobody in that category) scale to assess sympathy and reliance.	Social support was assessed only in SHARE Waves 1 and 2, with 21 items inquiring any help received from or given to someone outside of the household (family member, friend, or neighbor). Respondents were asked to specify the target that received/gave support by listing relations, which types of help were given (personal care, practical household help, or help with paperwork), how often help was received/given (daily, weekly, monthly, less often), hours received/given, and how often support was given to caring for grandchildren. The specific questions asked were: Now please think of the last twelve months. Has any family member from outside the household, any friend or neighbor given you [or] [your] husband/wife/partner] any kind of help? (yes, no) Which types of help has this person provided in the last twelve months? 1. personal care, e.g. dressing, bathing or showering, eating, getting in or out of bed, using the toilet 2. practical household help, e.g. with home repairs, gardening, transportation, shopping, household chores 3. help with paperwork, such as filling out forms, settling financial or legal matters In the last twelve months, how often altogether have you [or] [your] [husband/wife/partner] received such help from this person? Was it... (1. Almost daily, 2. Almost every week, 3. Almost every month, 4. Less often) About how many hours did you [or] [your] [husband/wife/partner] receive such help altogether [on a typical day/in a typical week/in a typical month/in the last twelve months] from this person? Is there any other family member from outside the household, friend, neighbor who has helped you [or] [your] [husband/wife/partner] with [the tasks listed on card 28] in the last twelve months? (yes, no)	Chance to talk about: •Personal or family issues •Chance to talk about work or home issues •Chance to talk about financial problems

Table V.5.2 Overview of multi-item measures of low social support/social strain available in different studies:

	HRS	ELSA	TILDA	MHAS
3-item				
How much do they really understand the way you feel about things?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
How much can you rely on them if you have a serious problem?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
How much can you open up to them if you need to talk about your worries?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
4-item				
How much do they really understand the way you feel about things?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
How much can you rely on them if you have a serious problem?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
How much can you open up to them if you need to talk about your worries?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
How much do they let you down when you are counting on them?	Waves 8-12	Waves 1-6	Waves 1-2	Waves 2-3
6-item				
How much do they really understand the way you feel about things?	Waves 8-12	Waves 1-6	Waves 1-2	
How much can you rely on them if you have a serious problem?	Waves 8-12	Waves 1-6	Waves 1-2	
How much can you open up to them if you need to talk about your worries?	Waves 8-12	Waves 1-6	Waves 1-2	
How much do they criticize you?	Waves 8-12	Waves 1-6	Waves 1-2	
How much do they let you down when you are counting on them?	Waves 8-12	Waves 1-6	Waves 1-2	
How much do they get on your nerves?	Waves 8-12	Waves 1-6	Waves 1-2	
7-item				
How much do they really understand the way you feel about things?	Waves 8-12		Waves 1-2	
How much can you rely on them if you have a serious problem?	Waves 8-12		Waves 1-2	
How much can you open up to them if you need to talk about your worries?	Waves 8-12		Waves 1-2	
How often do they make too many demands on you?	Waves 8-12		Waves 1-2	
How much do they criticize you?	Waves 8-12		Waves 1-2	
How much do they let you down when you are counting on them?	Waves 8-12		Waves 1-2	
How much do they get on your nerves?	Waves 8-12		Waves 1-2	

V.6. Cross-Study Concordance: Loneliness and Social Isolation

Items for a particular study which vary from those used in other studies are displayed in red font. Items in blue font are those which are the same across the multiple studies indicated.

Table V.6.1 Loneliness and Social Isolation Items: Cross-Study Concordance

HRS	ELSA	SHARE	TILDA
Rating Scale: 3-point (often, some of the time, hardly ever or never)	Rating Scale: 3-point (hardly ever or never, some of the time, often)	Rating Scale: 3-point (often, some of the time, hardly ever or never)	Rating Scale: 3-point (often, some of the time, hardly ever or never)
How often do you feel you lack companionship? (Waves 6, 7, 8, 9, 10, 11, 12)	How often do you feel you lack companionship? (Waves 2-6)	How often do you feel you lack companionship? (Waves 4 & 5)	How often do you feel you lack companionship? (Waves 1 & 2)
How often do you feel left out? (Waves 6, 7, 8, 9, 10, 11, 12)	How often do you feel left out? (Waves 2-6)	How often do you feel left out? (Waves 4 & 5)	How often do you feel left out? (Waves 1 & 2)
How often do you feel isolated from others? (Waves 6, 7, 8, 9, 10, 11, 12)	How often do you feel isolated from others? (Waves 2-6)	How often do you feel isolated from others? (Waves 4 & 5)	How often do you feel isolated from others? (Waves 1 & 2)
How often do you feel in tune with the people around you? (Waves 9, 10, 11, 12)	How often do you feel in tune with the people around you? (Waves 2-6)		How often do you feel in tune with the people around you? (Waves 1 & 2)
Alone? (Waves 9, 10, 11, 12)	How often do you feel lonely? (Waves 3-6)	How often do you feel lonely? (Waves 4 & 5)	How often do you feel lonely? (Waves 1 & 2)
That there are people you can talk to? (Waves 9, 10, 11, 12)			
That there are people you can turn to? (Waves 9, 10, 11, 12)			
That there are people who really understand you? (Waves 9, 10, 11, 12)			
That there are people you feel close to? (Waves 9, 10, 11, 12)			
Part of a group of friends? (Waves 9, 10, 11, 12)			
That you have a lot in common with the people around you? (Waves 9, 10, 11, 12)			

Additional indicators of loneliness were included in depression and/or perceptions of aging measures in some studies as detailed below:

HRS	ELSA	SHARE	JSTAR	KLoSA	CHARLS
"Much of the time during the past week... You felt lonely. (Would you say yes or no?)" (Waves 2-12) "During the past week, I felt lonely." (All or almost all of the time, Most of the time, Some of the time, None or almost none of the time). (Wave 1 and Wave 2 Experimental Module)	"How often do you feel lonely?" (hardly ever or never, some of the time, often)	Respondents were also asked to rate how often (almost all of the time, most of the time, some of the time, almost none of the time) they "felt lonely" on the CESD (Waves 1, 2, 4 & 5).	Respondents were asked to indicate how often not at all, 1-2 days, 3-4 days, 5 days or more) in the last week they "felt lonely." (Waves 1 & 2)	Respondents were asked to indicate how often (very rarely (<1 day), sometimes (1-2 days), often (3-4 days), almost always (5-7 days) in the last week they felt "alone" (Waves 1-4)	Respondents were asked to indicate how often (rarely or none of the time (<1 day), some or a little of the time (1-2 days), occasionally or a moderate amount of the time (3-4 days), most or all of the time (5-7 days)) they "felt lonely" in the last week. (Waves 1 & 2)
	"I feel left out of things" (never, not often, sometimes, often) (Waves 1-6)	Respondents were asked to rate how often (often, rarely, sometimes, never) they felt "left out of things." (Waves 1, 2, 4 & 5)			

Table V.6.2 Loneliness and Social Isolation Item Aggregates

3-item: How often do you feel you lack companionship? How often do you feel left out? How often do you feel isolated from others? 4-item: How often do you feel you lack companionship? How often do you feel left out? How often do you feel isolated from others? How often do you feel in tune with the people around you? 4-item (alternative): How often do you feel you lack companionship? How often do you feel left out? How often do you feel isolated from others? How often do you feel alone? 5-item: How often do you feel you lack companionship? How often do you feel left out? How often do you feel isolated from others? How often do you feel in tune with the people around you? How often do you feel alone?	11-item: How often do you feel you lack companionship? How often do you feel left out? How often do you feel isolated from others? How often do you feel in tune with the people around you? How often do you feel alone? . . . that there are people you can talk to? . . . that there are people you can turn to? . . . that there are people who really understand you? . . . that there are people you feel close to? . . . part of a group of friends? . . . that you have a lot in common with the people around you?

Table V.6.3 Overview of summary scores from multi-item measures of loneliness available in different studies:

Loneliness Scale	HRS	ELSA	SHARE	TILDA	JSTAR	KLoSA	CHARLS
3-item	Wave 6	Waves 2-6	Waves 4-5	Waves 1-2			
4-item	Waves 8-12	Waves 2-6	Waves 4-5	Waves 1-2			
4-item alternative	Waves 8-12	Waves 2-6	Waves 4-5	Waves 1-2			
5-item	Waves 8-12	Waves 3-6		Waves 1-2			
11-item	Waves 8-12						
Indicator for having felt lonely for much of the time in the past week.	Waves 1-12	Waves 1-6	Waves 1-5		Waves 1-2	Waves 1-2	Waves 1-4

V.7. Cross-Study Concordance: Environmental/neighborhood disorder and/or lack of cohesion items

Items for a particular study which vary from those used in other studies are displayed in red font. Items in blue font are those which are the same across the multiple studies indicated.

Table V.7.1 Environmental/Neighborhood Disorder and/or Lack of Cohesion Items: Cross-Study Concordance

HRS	ELSA	SHARE
Respondents utilize a 7-point scale with the following polar opposite characteristics at each end of the rating scale:	Respondents utilize a 7-point scale with the following polar opposite characteristics at each end of the rating scale:	Respondents were asked to use a 4-point scale to rate their degree of agreement (strongly agree, agree, disagree, strongly disagree) with the following statements:
I really feel a part of this area - - - - - - - I feel that I don't belong in this area	I really feel a part of this area - - - - - - - I feel that I don't belong in this area	I really feel a part of this area.
There is no problem with vandalism and graffiti in this area - - - - - - - Vandalism and graffiti are a big problem in this area	There is no problem with vandalism and graffiti in this area - - - - - - - Vandalism and graffiti are a big problem in this area	Vandalism or crime is a big problem in this area.
Most people in this area can be trusted - - - - - - - Most people in this area can't be trusted	Most people in this area can be trusted - - - - - - - Most people in this area can't be trusted	
People feel safe walking alone in this area after dark - - - - - - - People would be afraid to walk alone in this area after dark	People feel safe walking alone in this area after dark - - - - - - - People would be afraid to walk alone in this area after dark	
Most people in this area are friendly - - - - - - - Most people in this area are unfriendly	Most people in this area are friendly - - - - - - - Most people in this area are unfriendly	
This area is kept very clean - - - - - - - This area is always full of rubbish and litter	This area is kept very clean - - - - - - - This area is always full of rubbish and litter	This area is kept very clean.
If you were in trouble, there are lots of people in this area who would help you - - - - - - - If you were in trouble, there is nobody in this area who would help you	If you were in trouble, there are lots of people in this area who would help you - - - - - - - If you were in trouble, there is nobody in this area who would help you	If I were in trouble, there are people in this area who would help me.
There are no vacant or deserted houses or storefronts in this area - - - - - - - There are many vacant or deserted houses or storefronts in this area	---	
---	I have never felt lonely living in this area - - - - - - - I often feel lonely living in this area	
---	People in this area will always treat you fairly - - - - - - - People in this area will take advantage of you	
These items were administered in Waves 8 (2006) – 12 (2014).	These items were administered at Waves 1 and 3.	Administered at Wave 5.
Additional Indicators:		Additional Indicators:
A single item assessment of neighborhood safety (5-point scale from excellent to poor) was administered at Waves 5 and 7.		Four items also assess ease (very easy, easy, difficult, very difficult) of getting to the bank, supermarket, doctor/health center and pharmacy

JSTAR
At Wave 1, respondents were asked to respond (yes/no) to ten questions regarding the neighborhood environment: In regards to the local area: •Pharmacy and medical facilities are nearby   •Shops selling groceries and daily needs [are] nearby   •Park where you can walk and exercise safely nearby   •Train station or bus stop nearby   •There are pollution or noise problems   •There are concerns about public order such as vandalism or crime   •There is a location nearby to meet with friends   In regards to the people who live near you: •Do you think you can trust most of them?   •Do you think that others would take advantage of you given the opportunity?   •Do you think most of them try to help others?   Respondents were also asked to indicate that they thought of when they thought of the area "near" them (neighboring homes, same ward/school

district/health district, etc., same city or town, same prefecture, other, nothing special came to mind).

At Wave 2, for 5 cities, respondents were asked how long they had lived in their current neighborhood (less than 3 years to more than 30 years), whether they liked their area (5-point scale from very much to not at all) , and as at Wave 1 what they thought of when thinking of the area near them.

At Wave 2 for 2 cities and Wave 3, respondents were asked about socialization with neighbors:
•How closely do you associate with your neighbors? (helping each other in various aspects of life such as the giving and receiving of advice and the lending and borrowing of everyday items/close enough to chat almost daily on the street/having only minimal association that is no more than exchanging greetings/having no association)
•Approximately how many neighbors do you associate with? (many of those living in the neighborhood (20 or more)/a considerable number of those in the neighborhood (5-19)/only a few immediate neighbors (4 or less)/ do not know who lives next door